

**8/1/2013 STATEMENT OF CONSIDERATION
RELATING TO 704 KAR 3:303
Kentucky Core Academic Standards**

Kentucky Department of Education

Not Amended After Comments

1. A public hearing was held on the above regulation on July 23, 2013 at 10:00 a.m. in the State Board Room, Kentucky Department of Education, 500 Mero Street, 1st Floor, Frankfort, Kentucky.
2. The following individuals attended this public hearing or submitted written or verbal comments:

<u>Name and Title</u>	<u>Agency/Organization/Entity/Other</u>
Sheila Anderson	Citizen
Todd Belcher	Citizen
Blaine Ferrell	Kentucky Academy of Science
Trent Garrison	American Institute of Professional Geologists
Annice Milliner	Citizen
Valerie O-Rear	Retired Colonel/Parent
Dr. Don Patton	Citizen
Daniel Phelps	Kentucky Paleontological Society
Steve Shreeve	Citizen
Reverend Matthew John Singleton	Citizen
Dr. Tom Tretter	University of Louisville
Paul Vincelli	Citizen
Annice Milliner	Citizen
Gregory Gabbard	Citizen
Phillip Woolery	Citizen
Deborah Smith-Seadler	Citizen
Ann Seling	Citizen
John H. Batte	Citizen
Dedra Gordon	Citizen
Annette Rudd	Citizen
Paul Fuller	Citizen
Kim Phillips	Citizen
Barbara [no last name provided]	Citizen
Kate Hinkle	Citizen

Christopher Woods	Citizen
Brittany Slabach	Citizen
Molly M. Boggess	Citizen
Cean Peevey Rosenthal	Citizen
Sandy Sasso	Citizen
Kathy Long	Citizen
Jennifer Connor	Citizen
Sarah Gutwirth	Citizen
David W. Anderson	Citizen
Eloise Moor	Citizen
Tammy Troxell	Citizen
Anthony Hamilton	Citizen
Mike Walton	Citizen
Tracy Shipley	Citizen
Ricky Wainscott	Citizen
Rabecca Gainey	Citizen
Larry Lewis	Citizen
Carol Redies	Citizen
Mandy Olivam	Citizen
Vernell Larkin	Citizen
Roberta Chase	Citizen
Walt Barlow	Citizen
Jennifer Parrish-Lamb	Citizen
Dennis [no last name provided]	Citizen
Todd Kleffman	Citizen
Richard Cowie	Citizen
Kerry Isham	Citizen
Rose Bailes	Citizen
Jeane Cole	Citizen
Sue Burch	Citizen
Angela Cobb	Citizen
Noreen Mason	Citizen
Michael Ramsdell	Citizen
Darrin L. Smith	Citizen
Ann Chapman	Citizen
Venita Mullins	Citizen
Ann Triebisch	Citizen
Hunter Moseley	Citizen
Donald E. Waters	Citizen
Heather Gallimore	Citizen
D'Arcy Batson	Citizen
Bob Bickner	Citizen

Lindsay [no last name provided]	Citizen
Robin Allen	Citizen
Jennifer Birriel	Citizen
Ignacio Birriel	Citizen
Becky Alley	Citizen
Tracy Livingston	Citizen
Leonard Demoranville	Citizen
Debra Noem	Citizen
Sam Moore	Citizen
Karen Wood	Citizen
Nancy Aulbach	Citizen
Rex A. Sutton	Citizen
Dennis Kinkade	Citizen
Linda Matz	Citizen
Meredith Domurat	Citizen
Dallas A. Law	Citizen
Sandra Tattershall	Citizen
J. Meyer	Citizen
Herman Mays	Citizen
Neil Carey	Citizen
Michael Bellmore	Citizen
Irwin Cutler	Citizen
Mollie Suddeth	Citizen
Dorothy H. Schnare	Citizen
Jim Critchfield	Citizen
Lynda [no last name provided]	Citizen
David K Lindsey	Citizen
Andy P. Hudak	Citizen
Mike Moran	Citizen
Delia Thomson	Citizen
Sarah Nichols	Citizen
Nannez Williams	Citizen
Kim Fillmore	Citizen
Theresa Bierbauer	Citizen
Kaitlyn Reynolds	Citizen
Steve [no last name provided]	Citizen
Steven Goode	Citizen
Sharon Cason	Citizen
Linda Myers	Citizen
Lila Stambaugh	Citizen
Teresa Smith	Citizen
Anne Stambaugh Baker	Citizen

Frank Tomeo	Citizen
Bryan [no last name provided]	Citizen
Thomas Stewart	Citizen
Shilo Adams	Citizen
Nicholas McLetchie	Citizen
Mary Mckenna	Citizen
Ryan Kelly	Professor of Geography and Earth Science
Michelle Morad	Citizen
Brian Robertson	Citizen
Kerry A. Pickin Paumi	Citizen
Nagma Zafar	Citizen
Elena Diehl	Citizen
Valerie Brown	Citizen
Bruce Gurley	Citizen
Deborah Slone	Citizen
James Patrick Haynes	Citizen
George Heupel	Citizen
Karen Truman	Citizen
Les Waters	Citizen
Krista Johnson	Citizen
Barbara Fredrickson	Citizen
Sandi Joiner	Citizen
Nancy Garrett	Citizen
Natalie Stephens	Citizen
Jan Garrett	Citizen
Ron Thompson	Citizen
Susan Abbott-Jamieson	Citizen
April Bowles	Citizen
Brandi Bramblett	Citizen
Karen Duckwall	Citizen
Donna Workman	Citizen
Jan Hill	Citizen
Laura [no last name]	Citizen
David Bowling	Citizen
Dianne Bazell	Citizen
Reda Bianchi	Citizen
Gina Kleinhelter	Citizen
Kristan Lennin	Associate Professor of Chemistry
Bethany Bowling	Citizen
Angela Anderson	Citizen
Jarrold Sherman	Citizen
Renee Muse	Citizen

David McBride	Citizen
Lindsay Blair Warren	Citizen
Cameron Lippert	Citizen
Greg Cordier	Citizen
Andrew Gardner	Citizen
Regina Wilson	Citizen
Suzanne La Rosa	Citizen
John Langley	Citizen
Joyce Tudor Pilling	Citizen
Nancy Velotta	Citizen
Emma Stow	Citizen
Paul Hime	Citizen
Jeannette [no last name provided]	Citizen
Jeanne Van Arsdall	Citizen
Raymond Wechman	Citizen
Marcia Salisbury	Former Teacher
Ann Fraley	Citizen
Louise Steidel	Citizen
Justin Burgess	Citizen
Stephen P. Kellerman	Citizen
Jill Rogers	Citizen
Jena [no last name provided]	Citizen
Jed Johnston	Citizen
Malinda McMurry	Citizen
Roger Ingram	Citizen
Frances Ball	Citizen
Bill Mattingly	Citizen
Don Moore	Citizen
William De Sanctis	Citizen
Cassandra Lyons	Citizen
Sandy Donlin	Citizen
Maeve McCarthy	Citizen
Vickie Williams	Citizen
Amy [no last name provided]	Citizen
Stephen Ellis	Citizen
Laura Webb	Citizen
Steven F. Stone	Citizen
Rosie Blackburn	Citizen
Cathy Wester	Citizen
Lial Thompson	Citizen
Steve Kerlin, Ph.D.	Citizen
Rebecca White	Citizen

Leslie K. Russo	Citizen
Kristin Eppinghoff	Citizen
Jerry Roahrig	Citizen
Eleni Maroudas	Citizen
Justin Woodson	Citizen
Andrew Day	Citizen
Zaida Belendez	Citizen
Susan Odom	Citizen
Tony Maynard	Citizen
Louisa Woodson	Citizen
Ginger Rawe	Citizen
Shane Smith	Citizen
Dino Lucarelli	Citizen
Maurice LeFevre	Citizen
Karen Elder	Citizen
Liz Huffman	Citizen
Jonathan Hembree	Citizen
Sarah Emery	Citizen
Mitchell Harmon	Citizen
Brandon Franklin	Citizen
Jason Collett	Citizen
Patricia [no last name provided]	Citizen
Timothy E. Dowling, Director	Atmospheric Program at University of Louisville
Trish [no last name provided]	Citizen
George Wagner	Citizen
Liz [no last name provided]	Citizen
Steven Osborne	Citizen
Kathryn Niles	Citizen
Judy Morris	Citizen
Scott Mello	Citizen
Zach [no last name provided]	Citizen
David A. Howarth	Climate Scientist
Sherrie Lee	Citizen
Robert Hall	Citizen
Kathy Hodges	Citizen
Jennifer Yates	Citizen
Hope Reuschel	Citizen
Gregory A. Dahlem	Citizen
Kristen Kean	Citizen
Monica [no last name provided]	Citizen
Erik Jarvis	Citizen
Rita Kauffman	Citizen

Jonathan Gore	Citizen
Michal Mello	Citizen
Joe Chewning	Citizen
Pam Ayer	Citizen
Jane Varakin	Citizen
Dave Serchuk	Citizen
Jeri Thomas	Citizen
Betsy Martin	Citizen
Todd Willard	Citizen
Henry A. White	Citizen
Robert Akin	Citizen
Penelope A Wong	Citizen
David Bowman	Citizen
Kristy Hopfensperger, Ph.D.	Citizen
Bess K. Douthitt	Citizen
Caroline McCoy	Citizen
Susan P Hendricks	Citizen
Craig Bentin	Citizen
Colleen Musinski	Citizen
Steve Goodwin	Citizen
Skip McCall	Citizen
Mike Harmon	Citizen
D.W. Swain	Citizen
Ron Saderholm	Citizen
Rhoden Streeter	Citizen
Nancy Pauley	Citizen
Shanin Lodhi	Citizen
Joel McRennary	Citizen
J. Anthony Stallins	Citizen
William Powell	Citizen
Doris Hensley	Citizen
Barbara Hicks	Citizen
Krys Lynam	Citizen
George Robertson	Citizen
Carrie Vittitoe	Citizen
Al Nelson	Citizen
Jerry Yeager	Citizen
Ross C. Clark, Ph.D.	Citizen
Vicki Downs	Citizen
Tim Griffith	Citizen
Eric O'Neil	Citizen
Stacy Padgett	Citizen

Beverly Willman	Citizen
G. Dew	Citizen
Bruce Bohns	Citizen
Jeffrey L. Osborn	Citizen
Jeanne Osborne	Citizen
Beth Wallingford	Citizen
Brent Garrett	Citizen
Robert Mills	Citizen
Teresa Wurts	Citizen
Beverly Strange	Citizen
Darius Shariaty	Citizen
Diana Martin	Citizen
Dawn Lynch	Science Teacher
Ed Causey	Citizen
Dr. Ronald L. Fiel	Citizen
Julie Mills	Citizen
Mindy Jaffe	Citizen
Shirley Mayer	Citizen
Shauna Dunham	Citizen
John J. Metz, Director	Department of History and Geography, Northern Kentucky University
Beverly Juett	Citizen
Ryan Boatwright	Citizen
Annie Gleason	Citizen
David White, Ph.D	Citizen
Alisha Lehew	Citizen
Joel Merlin	Citizen
Martin Brock	Citizen
Olivia M. Sprouse	Citizen
Al Fritsch	Citizen
Joseph Ray	Citizen
Casey [no last name provided]	Citizen
Amanda Gilliam-Rose	Citizen
Susan Shackelford	Citizen
Leann Scott	Citizen
Sara E. Greene	Citizen
Norma Craig	Citizen
Melissa [no last name provided]	Citizen
Andrea Drayer	Citizen
Daniel Lloyd	Citizen
Bob Smither, Jr.	Citizen
Alan J Zemon	Citizen

Tracy Zaparanick	Citizen
Anna Boller	Citizen
Mike Turner	Citizen
Alice Neff	Citizen
Jonathan Busroe	Citizen
Ruth Hendrix	Citizen
Hannah Mills	Citizen
Kyle Burchett	Citizen
Nathaniel Haynes	Citizen
Charlotte Henderson	Citizen
Rachel Bongard	Citizen
Bob Bruce	Citizen
Amanda Fuller	Citizen
Theresina Greenwell	Citizen
Jamie Hale	Citizen
Betty [no last name provided]	Citizen
Janie Browning	Citizen
Charles H. Bennett, Ph.D.	Citizen
Ian Galbraith	Citizen
Marcia Pierce	Citizen
Laura Brestel	Citizen
Anne G. Woodhead	Citizen
Ierusha Martin	Citizen
Linda Wooten	Citizen
Caleb Mathis	Citizen
Christina Espinosa	Citizen
Vivien McAninch	Biology Teacher, Madison County
Linda Tribble	Citizen
Peter Mirabito, Ph.D.	Citizen
Christina Parrish	Citizen
Trish Sharp	Citizen
Cecilia Chauvin	Citizen
Jan Wertz	Citizen
Anes Kovacevic	Citizen
Jane Ann Blakeman	Citizen
Cynthia Isenhour	Citizen
Daniel Coe	Citizen
Bill Hardin	Citizen
Brenda Stokes	Citizen
Danna Morrison	Citizen
Joel Handley	Citizen
Ingrid Weiland	Citizen

Mary Bridges	Citizen
Sherie Kendall, Ph.D.	Citizen
Mary Livingstone	Citizen
Phyllis VanMetre	Citizen
Roy Crawford	Citizen
Pamela W. Feldhoff, Ph.D.	Citizen
Dr. Justin Mog	Citizen
Ann Witherington	Citizen
Kevin Beers	Citizen
Nell F. Cox	Citizen
Lynn McFalls	Citizen
Wayne Willis	Citizen
Lauren Holtgrave	Citizen
Peter W Campbell	Citizen
Michael Cooper	Citizen
Conrad Shiba	Citizen
Megan Rhoads	Citizen
Rebecca Eggers	Citizen
Thom Kerby	Citizen
Brenna Tinsley	Citizen
Derick B. Strod	Citizen
Lynn M. Hamilton	Citizen
Leslie Potts	Citizen
Daniel Douglas	Citizen
Debra Jordan	Citizen
Emily Moseley	Citizen
Chris Trzepacz	Citizen
Sarah Taylor	Citizen
Stephen Wechman	Citizen
Sommer Johnson	Citizen
Todd Yetter	Citizen
Philip White	Citizen
Adrienne Gilley	Citizen
Matt Crawford	Citizen
Adam Bohannon	Citizen
Tiffany McFalls	Citizen
S. Rucker	Citizen
Travis Robinson	Citizen
Tracey Goodlett	Citizen
Kathy Glass	Citizen
Christopher Cansler	Citizen
John A. Spurlock	Citizen

Deanna Brockman	Citizen
Rebecca Kellum	Citizen
Katherine Dyke	Citizen
Ashley Gibson	Citizen
Mary K. Whitson, Ph.D.	Citizen
Whitney Fields	Citizen
Brian Sansbury	Citizen
Shelley Thomas	Citizen
Verdie A. Craig, PhD	Citizen
Brian L. Rich	Citizen
Melissa L. Shirley, Ph.D.	Citizen
Erin [no last name provided]	Citizen
Signe White	Citizen
Victoria [no last name provided]	Citizen
Justin Kratovil	Citizen
David Moldoff	Citizen
Joe Wolf	Citizen
Nadezda Nikolova	Citizen
Janet K. Lumpp	Citizen
John C. Philley	Citizen
Meghan Knapp	Citizen
Pamela M Jett	Citizen
Marie Nydam	Citizen
Amanda LaFontaine	Citizen
Ann Bickel	Citizen
Julie Evans	Citizen
N.S. Hagans	Citizen
Barbara Solomon	Citizen
Zachary Thomas	Citizen
Amanda Bowman	Citizen
Glenda Marker	Citizen
Sarah Lovett	Citizen
Mark Blankenbuehler	Citizen
Ogo Onyiri	Citizen
Marcia Texler Segal	Citizen
Bruce Mattingly	Citizen
Jacqueline Dillard	Citizen
J. R. Robinson	Citizen
Sherri Brown	Citizen
Rachel Baldes	Citizen
Virginia Ceesay	Parent and Educator
Amanda Harrison	Citizen

Kit Wesler	Citizen
Gary Adams	Citizen
Laura Gardner Heyrman	Citizen
Kelley M. Rule	Citizen
Pamela Dumm	Citizen
Ryan Huber	Citizen
Tracy Hodge	Citizen
Dr. Akhtar Mahmood	Citizen
Kelly Saderholm	Citizen
Lisa Nichols	Citizen
Zexia Barne	Citizen
Michelle Giedt	Citizen
M. Smith	Citizen
Ralph J. Knipp	Citizen
Carol Wymer	Citizen
Erin McCord	Citizen
Terry Derting	Citizen
Miranda Westbrook	Citizen
George Kaufman	Citizen
Nash Cox	Citizen
Blaine Ferrell	Citizen
Tammera Race	Citizen
Brian Rymond	Citizen
Janice Walker	Citizen
Douglas Smith	Citizen
Colleen Small	Citizen
Thomas Parker	Citizen
Dr. Mikhail Khenner	Citizen
Matthew Saderholm	Citizen
Jennifer Reed	Citizen
Rosanne Lorden	Citizen
Adrienne Gearheart	Citizen
Tom Bennett, Ph.D.	Citizen
Jennifer Wies	Citizen
John Volpe	Citizen
Honey Dozier	Citizen
Gaye Brewer	Citizen
Lina Tharsing	Citizen
Vonda Martin	Citizen
Syed Khundmiri	Citizen
Alexandre Martin	Citizen
Janet O'Connell	Citizen

Linda Sheffield	Citizen
Dr. Ken Carstens	Citizen
Maiyon Park	Citizen
Richard L. Boyce, Ph.D.	Citizen
Walter Gearheart	Citizen
Ken Crawford	Citizen
John H Morgan	Citizen
Robert Pendygraft	Citizen
Judy Voelker	Citizen
Peter S. Fosl	Citizen
Robert H Biggerstaff	Citizen
Lori Wilson	Citizen
John Barry Sipple	Citizen
Charles Edward Allgeier	Citizen
Nancy Martin	Citizen
Nicolette Lawrence	Citizen
Ann Garrity	Citizen
Patricia J. Rhoten	Citizen
Katherine Weckman	Citizen
Sheena Puckett	Citizen
Scott Wilmoth	Citizen
Fred [no last name provided]	Citizen
John Griley	Citizen
Dave Cobb	Citizen
Richard Pryor	Citizen
Matthew Clarke	Citizen
Connie May	Citizen
William Martin	Citizen
Timothy Belcher	Citizen
Daniel Williams	Citizen
Katie Anderson	Citizen
Carol Edeloan	Citizen
Barbara Kacer	Citizen
Angela Taylor	Citizen
Melissa Hackorth	Citizen
Laura Malbasa	Citizen
Steve Ruth	Citizen
Lawrence Smith	Citizen
Kenn Minter	Citizen
Shane Thomae	Citizen
Allen Kirkwood	Citizen
Matthew Wells	Citizen

Amelia Kirby	Citizen
Sherry Loeser	Citizen
Brian Moore	Citizen
Sherra Koshio	Citizen
Ali Blair	Citizen
Andreea McClintock	Citizen
Anna Bard	Citizen
Emilie Hunt	Citizen
Jeffrey F. Steele	Citizen
Catherine Caldwell	Citizen
Lindsey MacGregor	Citizen
Thomas Osborne	Citizen
Vickie Glass	Citizen
Emily Beauregard	Citizen
Susan Templeton	Citizen
Julia Richerson	Citizen
Atheana Meadows	Citizen
Amy Steele	Citizen
Michael Petty	Citizen
Maria Arroyo	Citizen
Michael Dawes	Citizen
Jane Vigor	Citizen
Judy Muehleman	Citizen
Derek Feldman	Citizen
Mary Keogh	Citizen
David Lautzenheiser	Citizen
Carol Detmer	Citizen
Kevin Schouweiler	Citizen
Lisa Weaver	Citizen
Janet Peterson	Citizen
Christopher Huelsman	Citizen
Thomas E. Comte	Citizen
Shanessa Littrell	Citizen
Ann All	Citizen
Misty Like	Citizen
Slavica [no last name provided]	Citizen
Carol Leow	Citizen
Christie Dunham	Citizen
Nancy Busroe	Citizen
Keith McAliley	Citizen
Stacie Huber	Citizen
Michele Jessie	Citizen

Erin Doherty	Citizen
David Farris	Citizen
Robin Atwell	Citizen
Sharon Kopyc	Citizen
Elizabeth U. Natter	Citizen
Drew Musgrave	Citizen
Kim Cargo	Citizen
Norma Boyd	Citizen
M. Kiser	Citizen
Bette Stearns	Citizen
Alix Burke	Citizen
Raymond Solomon	Citizen
Carl Wieck	Citizen
Dan Winfield	Citizen
Brenda Brasher	Citizen
Paul Wigler	Citizen
Annette Hayden	Citizen
Bruce Hardesty	Citizen
Pamela Thompson	Citizen
Laurel Lamb	Citizen
Donna [no last name provided]	Citizen
Elise Hyder	Citizen
Cindy Murphy	Citizen
Gregory West	Citizen
Jeremy Puckett	Citizen
Kim Root	Citizen
Doris Anderson	Citizen
Kevin Hackworth	Citizen
David Robinson	Citizen
Victoria [no last name provided]	Citizen
Dawn [no last name provided]	Citizen
Nathan Bayne	Citizen
Sheri Depp	Citizen
Wayne Coffey	Citizen
Karen Carey	Citizen
Anne Authur	Citizen
Barbara Watts	Citizen
Glenn Gevedon	Citizen
Tammy Ubach	Citizen
Ellen Guyer	Citizen
Bob Geiger	Citizen
Janet A. Isenhour	Citizen

Edward Ballinger	Citizen
Bonnie Avery	Citizen
Mina Davis	Citizen
James Watts	Citizen
Sandra Munn	Citizen
Alex Gerrish	Citizen
Sharessa Bentley-Crovo	Citizen
Leslie Kulig	Citizen
Nan Harnice	Citizen
Whitney McKay	Citizen
Alex [no last name provided]	Citizen
Dean W. West	Citizen
Tommye Bell	Citizen
Donald Varakin	Citizen
Pam [no last name provided]	Citizen
Barbara Farley	Citizen
Aloma Dew	Citizen
James Calhoun	Citizen
Mary Ann Schultz	Citizen
Brandi Jarvis	Citizen
Karen Rossi	Citizen
Amy Baglan	Citizen
Jose Ubach	Citizen
Glenn Augenstein	Citizen
Shayne Holsinger	Citizen
Cheri Reed	Citizen
Esther Klaphaak	Citizen
Patricia Donohue	Citizen
Thomas Theodore Welborn	Citizen
Eileen James	Citizen
Rebecca Smith	Citizen
Mary C. Heist	Citizen
Mary Ann Baker	Citizen
Andrew [no last name provided]	Citizen
Jonni Marselle	Citizen
Zane Lockhart, Jr.	Citizen
Teresa Christmas	Citizen
Wendy Butler Burt	Citizen
April Morgan	Citizen
Michael Stephen	Citizen
Rick Brown	Citizen
Jeffrey L. Jones	Citizen

Peggy Patrick	Citizen
Bonnie C. Plummer	Citizen
Melissa [no last name provided]	Citizen
Kate Mansfield	Citizen
Toby Wilcher	Citizen
Martina G. Yantis	Citizen
Sareva Moore	Citizen
Linda Cash	Citizen
Laradean Brown	Citizen
Beverly James	Citizen
Harley Morris	Citizen
Linda Trautwein	Citizen
Connie Priddy	Citizen
Shelley J. Lee	Citizen
Tim D. Sullivan, Ph.D.	University Professor
Carol Morris	Citizen
Carla Broecker	Citizen
Ellen Collins	Citizen
April Browning	Citizen
Patricia Collins	Citizen
Joanna Busro	Citizen
Stephanie Hamilton	Citizen
Susan Stopher	Citizen
Carroll Grossman	Citizen
Trevor Rowe	Citizen
Jennifer Kaminski	Citizen
Mary June Bruner	Citizen
Carol Savkovich	Citizen
Patricia Ricketts	Citizen
Alice Snider	Citizen
Josh Tillson	Citizen
Scott Graham	Citizen
Helene Steene	Citizen
Stephanie Breitmeyer	Citizen
Jeaneen Aldridge	Citizen
Joe Gallenstein	Citizen
Fred Davis	Citizen
Donald Borders	Citizen
Virginia Johnson	Citizen
Pam Kuist	Citizen
Jessica Loving	Citizen
Mark [no last name provided]	Citizen

Margie Waflare	Citizen
John Thompson	Citizen
G. Pahler	Citizen
John Shackelford	Citizen
Mary Anne Reiss	Citizen
Bonnie Barnette	Citizen
Albert J. Sausville	Citizen
Kenny Griffin	Citizen
Amy Bosch	Citizen
James Cook	Citizen
Meghan Casper	Citizen
Keith Salyer	Citizen
Roy Davis	Citizen
Lori [no last name provided]	Citizen
Xyara Asplen	Citizen
Connie Evans	Citizen
Joanie Lukins	Citizen
Diana H. Munson	Citizen
Jeannie Taylor	Citizen
Laura Emery	Citizen
Linda Wagner	Citizen
L. Helm	Citizen
Donna [no last name provided]	Citizen
Thomas Creahan	Citizen
Patty Toth	Citizen
Eddie McClellan	Citizen
Dorothy Pitt	Citizen
Marjorie Kohn	Citizen
E. Deane Palmer	Citizen
Sharilyn Jones	Citizen
Christopher Schardl	Citizen
Kelly Quade	Citizen
Lorah Palmer	Citizen
Elise Kalika	Citizen
Christine Wright	Citizen
Ivory Moore	Citizen
Carol E. Bastian	Citizen
Jill Hissom	Citizen
Ann Walthall	Citizen
Sandra [no last name provided]	Citizen
David G. Blackburn	Citizen
Claudia Reeves	Citizen

Bruce Marchionda	Citizen
Janet Davis	Citizen
Hope Marchionda	Citizen
John Vornberger	Citizen
Thomas Price	Citizen
Nan B. Williamson	Citizen
Matthew Zook	Citizen
Cheryl Bensing	Citizen
Teresa Lanford	Citizen
Katherine Threatt	Citizen
Paul D Jett	Citizen
Cecilia Bandy	Citizen
Jane Wallace	Citizen
Randy Reynolds	Citizen
David Jett	Citizen
Linda Skaggs	Citizen
Scott Locks	Citizen
Tammy E. Spinks	Mother of two Kentucky teachers
Drew Foley	Citizen
Jim Mathis	Citizen
Jason Hatton	Citizen
Betty Goodman	Citizen
Kristin Burnside	Citizen
Charles Newell	Citizen
Miriam Woodhead	Citizen
Susan Reynolds	Citizen
Tony Bedel	Citizen
Patricia Hahn	Citizen
J.P. Fentress	Citizen
K.A. Owens	Citizen
Kent Gilbert	Citizen
Shannon [no last name provided]	Citizen
Carol Wittreich	Citizen
Traci Thompson	Citizen
Cassandra Lieder	Citizen
Mary Ann Bowman	Citizen
Paige Beichler	Citizen
J. Weber	Citizen
Louis Peters	Citizen
Kim Dixon	Citizen
Sharon Rengers	Citizen
James Roberts	Citizen

Amy Spurlock	Citizen
Jen Walters Petry	Citizen
Brent Williams	Citizen
Armando J. Prats	Citizen
Teresa [no last name provided]	Citizen
Nell Whitman	Citizen
Dr. Don Osten	Citizen
Carlena Johnson	Citizen
Chuck Frasher	Citizen
Louis Moseson	Citizen
Glenn Prezocki	Citizen
Susan Byars	Citizen
Deborah Larkin	Citizen
Julia Barr	Citizen
Robert Preston Pipal	Citizen
Robert Gibson	Citizen
Deborah Larkin	Citizen
Lawrence Wasser	Citizen
Martin Solomon	Citizen
Linda Jasper	Citizen
Charlotte Williams	Citizen
Peggy Wray-Tolbert	Citizen
Meryl Becker-Prezocki	Citizen
Joan Gregory	Citizen
Fawn Whitley	Citizen
Amanda Riley	Citizen
Hervey Howell	Citizen
Desmon McMahan	Citizen
Cary Williams	Citizen
Josh Spencer	Citizen
John Scheibert	Citizen
Caleb [no last name provided]	Citizen
Elizabeth A. Kesterson	Citizen
Mary Ann Taylor-Hall	Citizen
Hilda Hamilton	Citizen
David Kobersmith	Citizen
Patricia Whitehead	Citizen
Christine M. Collier	Citizen
Ben Evans	Citizen
James Toy	Citizen
Corinne M. Luvisi	Citizen
Lynda Merz	Citizen

W. R. Beard	Citizen
Jeremiah Floyd	Citizen
Denise Luellen	Citizen
Lori Pierce	Citizen
Cheryl Dee Morgan Scaggs	Citizen
Michael Miller	Citizen
Tama [no last name provided]	Citizen
Jeremy Wooldridge	Citizen
George Weems	Citizen
Stephanie Rommel	Citizen
Karl Wheeler	Citizen
Marilyn Willhoit	Citizen
Rachael Edmiston	Citizen
Tee [no last name provided]	Citizen
Monica Unseld, Ph. D	Citizen
James Edwards	Citizen
Carl R. Hausman	Citizen
Macenzie Brown	Citizen
Bob [no last name provided]	Citizen
Barbara Tuttle	Citizen
Keegan McGee	Citizen
Michaela L. Stanley	Citizen
Linda Powe	Citizen
Londa [no last name provided]	Citizen
Susan Laforge [no last name provided]	Citizen
Karena Patterson	Citizen
Marie Cassidy	Citizen
Carolyn Humphrey	Citizen
Donna Rocchetti	Citizen
Jane Andrus	Citizen
David B. Williams	Citizen
Liang Liang	Citizen
David Lynch	Citizen
Mary Jo Hummeldorf	Citizen
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Susan [no last name provided]	Citizen
Chet Sygiel	Citizen
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Mary Hayes	Citizen
Virginia Meagher	Citizen
Joanna [no last name provided]	Citizen
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Christopher [no last name provided]	Citizen
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Corey [no last name provided]	Citizen
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Gerry Lykins	Citizen
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Judith Mize	Citizen
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Aaron Collins	Citizen
Jane [no last name provided]	Citizen

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Ruth Greenberg	Citizen
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Andy Cobb	Citizen
Sue Foster	Citizen
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Michael Holian	Citizen
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John Bills	Citizen
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Lyndia Elder	Citizen
Jen Ledford	Citizen
Debbie Steele	Citizen
Christy McCoy	Citizen
Coleman Taylor	Citizen
Diana Stuart	Citizen
Grace Carswell	Citizen
Rebecca Elliott	Citizen
Sheila [no last name provided]	Citizen
Claudia [no last name provided]	Citizen
Richard Perry	Citizen
Melissa Morgenson	Citizen
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Elizabeth Wilson	Citizen
Karen C. McHugh	Citizen
Michele Turner	Citizen
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Kimberly DeZarn	Citizen
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William McAuliffe	Citizen
Therese Hildebrand	Citizen
Phillip Delaney	Citizen
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Kyle [no last name provided]	Citizen
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Calvin R. Minton	Citizen
Reverend Jim Oxyer	Citizen
Janet Overman	Citizen
Sarah Griffin	Citizen
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Gregory [no last name provided]	Citizen
Yolanda Morris	Citizen
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Wendy Hatfield	Citizen
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Barry Brunson	Citizen
Whitney [no last name provided]	Citizen
Myron McLain	Citizen
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Susan Taylor	Citizen
Justin David Miracle	Citizen
Peggy Tope	Citizen
Judy Schroeder	Citizen
Joyce Mosher	Citizen
Edgar Lopez	Citizen
Peter [no last name provided]	Citizen
Stephanie Weber	Citizen
Edgar Lopez	Citizen
Laura White	Citizen
W. B. Bickel	Citizen
Shannon Ellis	Citizen
Gaylia Bond	Citizen
Dean Ward	Citizen
Kristyn [no last name provided]	Citizen
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Kim Kincaid	Citizen
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Mandy Clarke	Citizen
Marilyn Robie	Citizen
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Tim Petersime	Citizen
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Esse Hodge	Citizen
Cindy Yeager	Citizen
Tracy Irwin	Citizen
Tammy Bennington	Citizen
Maria Marchal	Citizen
Virginia Delaney	Citizen
Claudia Collins	Citizen
Lane Boldman	Citizen
Denise Bradshaw	Citizen
Anwen Dutson	Citizen
Jeff Sharp	Citizen
Julie Minor-Hackworth	Citizen
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Sally Hattemer	Citizen
Ryan Merickel	Citizen
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David Smith	Citizen
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Gwendolyn Haver Davis	Citizen
Annette Redd	Citizen
Joe Oldham	Citizen
Don Pratt	Citizen
Teresa White	Citizen
Bill Bowman	Citizen
Dustin Wygant	Citizen
Rodney Ashby	Citizen
Jerry Sykes	Citizen
Raymond Barry	Citizen
Alice Harris	Citizen
Enoch Harding	Citizen
Shannon [no last name provided]	Citizen
Dave Starke	Citizen
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Judith Niles	Citizen
Mary Kasarskis	Citizen
Brenda K. Fauber	Citizen
Kathy Wolfson	Citizen
Alison Meehan	Citizen
Teresa Osborne	Citizen
Anthony Slone	Citizen

Rachel D. Gati	Citizen
Karen Levy	Citizen
Katherine S. Goetz	Citizen
James [no last name provided]	Citizen
Gerald Glover	Citizen
Richard Barnett	Citizen
Joan Georgick	Citizen
Jason D. Gati	Citizen
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James Kimbrough	Citizen
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Carolyn Biggs	Citizen
Robin K Bagley	Citizen
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Dan [no last name provided]	Citizen
Linda Boggs	Citizen
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Delilah [no last name provided]	Citizen
Lois Gaines	Citizen
Melissa Embry	Citizen
Gwen McDyer	Citizen
Monica [no last name provided]	Citizen
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Judy Goldsmith	Citizen
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David M Butler	Citizen
Larry J. Spivey	Citizen
David Ludden	Citizen
Charlie [no last name provided]	Citizen
Ned Smith	Citizen
Monique Morton	Citizen
Gretchen Milliken	Citizen
Russell Moore	Citizen
Judy Richardson Jett	Citizen
Rada [no last name provided]	Citizen
Lisa [no last name provided]	Citizen
Jeanette Coufal	Citizen
Joan Tokarz	Citizen
Peggy Helm	Citizen
Phyllis [no last name provided]	Citizen
Keith Bond	Citizen
Judith Olson	Citizen
Donna Blue	Citizen
Jennifer Van Winkle	Citizen
Barb Sherman	Citizen
Brian Bottom	Citizen
John P. Lonneman	Citizen
Denise Davis	Citizen
Scott Hodge	Citizen

John [no last name provided]	Citizen
Tim York	Citizen
Christopher Hofmann	Citizen
Sheila Hardaway	Citizen
Ann Sharp	Citizen
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Greg Tichenor	Citizen
Kamala Thompson	Citizen
Greg Miller	Citizen
Claire Fuller	Citizen
Robert Wilson	Citizen
Cynthia Robinson	Citizen
Samantha [no last name provided]	Citizen
Rebecca Rumery	Citizen
John Youngblood	Citizen
Donnie Duncan	Citizen
Mary Kroncke	Citizen
Amanda Sorrell	Citizen
David Watson II	Citizen
Ed [no last name provided]	Director, Kentucky Env. Ed. Projects
Stephanie [no last name provided]	Citizen
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Blair Boden	Citizen
Ron Wagoner	Citizen
Tina Davis	Citizen
Joseph Wathen	Citizen
Thomas H. Pike	Citizen
Carol Held	Citizen
Suzann O'Koon	Citizen
Richard [no last name provided]	Citizen
Helen Jones	Citizen
Patricia Hawkins	Citizen
Maleva Chamberlain	Citizen
Bruce Schulte	Citizen
Connie [no last name provided]	Citizen
Julie Hansen	Citizen
Julie [no last name provided]	Citizen
Adam Casson	Citizen

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Patricia Gailey	Citizen
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Silver Hamlin	Citizen
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Donna Clontz	Citizen
Ashley Butler	Citizen
Katherine Andrews	Citizen
Gloria Hanlon	Citizen
Dona Renfro	Citizen
Vahid Salehi	Citizen
Danica V. Meredith	Citizen
Denis Burton	Citizen
Carrol [no last name provided]	Citizen
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Bill Best	Citizen
Mary O'Shea	Citizen
Ronald DeChristoforo	Citizen
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Lisa Hollander	Citizen
Selva Calderon	Citizen
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John Kowynia	Citizen
Tom Miller	Citizen
Deb [no last name provided]	Citizen
Leon Pauley	Citizen
Diane Danckert-Jinks	Citizen
Vi Ligenza	Citizen
David Vicari	Citizen
Nan Willis	Citizen
Almeda J. Haskins	Citizen
Paul R. Blackburn	Citizen
Else K. Bolotin	Citizen
Pam Massey	Citizen
Gina Picoro	Citizen

Mellanie Clayton	Citizen
Gayla Gilbert	Citizen
Patricia Ayers	Citizen
Lora Hillerich	Citizen
Brian Clark	Citizen
Linda Woolridge	Citizen
Joseph Baust	Citizen
Donna Puckett	Citizen
Dee Atkinson	Citizen
Julie Reynolds	Citizen
Rachel Kennedy	Citizen
Betsy Adler	Citizen
Sharyl Emberton	Citizen
Albert Sinks	Citizen
Kandy Fear	Citizen
Heather [no last name provided]	Citizen
Kenneth Zegart	Citizen
Amy Coe	Citizen
Linda Young	Citizen
Cheryl Nowling	Grandparent
Sonya Jackson	Citizen
Anthony Bailey	Citizen
Karen Chinetti	Citizen
Jen Shean	Citizen
Jennifer Shean	Citizen
Randa McPherson	Citizen
Sharon Crawford	Citizen
Peggy Watson	Citizen
Brandi Warren	Citizen
Ollie Preece	Citizen
Faith McCoomer	Citizen
Kathy Steinmetz	Citizen
Ron Spangler	Citizen
Charlie Perkins	Citizen
Raellyn Hatter	Citizen
William Bennett	Citizen
Norm Strobel	Citizen
Rosann Efron	Citizen
Mary [no last name provided]	Citizen
Judy Johnson	Citizen
Erika Ravenscraft	Citizen
Georgiana W. Strickland	Citizen

Rick Straus	Citizen
Mona Lahner	Citizen
Norm Strobel	Citizen
Phyllis Manners	Citizen
Grant Short	Citizen
Marcia [no last name provided]	Citizen
Sean Prónay	Citizen
Stella Gibson	Citizen
Susan M. Bentley, MD, PhD	Citizen
Andrea Autry	Citizen
Sherri M. McGee	Citizen
Barbara Schwabe	Citizen
Chris Miller	Citizen
Ed O'Connell	Citizen
Kelsey Forren	Citizen
Barbara Cambron	Citizen
Carole Gahm	Citizen
Jeffnye Strey	Citizen
John Wesley Humphries	Citizen
David Shroyer	Citizen
Carlos Palomino	Citizen
Jenny Stephenson	Citizen
Anna [no last name provided]	Citizen
Rosemarie [no last name provided]	Citizen
Joe Brackett	Citizen
Melanie Wyatt	Citizen
Judy Stice	Citizen
Mark Steiner	Citizen
Jackson Reese Faust	Citizen
Billy Hunt	Citizen
Elizabeth Coleman	Citizen
Loyal Jones	Citizen
Edward Colley	Citizen
David Underwood-Sweet	Former Teacher
Phyllis England	Citizen
David Gilmour	Citizen
Nashia Fife	Citizen
Nathan Womack	Citizen
Jeanne Marie Hibberd	Citizen
Cheryl Shuffitt	Citizen
Tiffany Vair	Citizen
Victoria Arnett	Citizen

Christina Stephenson	Citizen
Debra Beckmann	Citizen
Deborah Raftery	Grandparent
Greg Drake	Citizen
Anne Roberts	Citizen
Thomas Geoghegan	Citizen
Naomi Schulz	Citizen
Nancy Adams	Citizen
Drexel Greene	Citizen
Delphine Le Dorze	Citizen
Joe Drury	Citizen
Ben [no last name provided]	Citizen
Jane Fink	Citizen
Lauren Ashcraft	Citizen
Ronald Byars	Citizen
Elizabeth Perkins	Citizen
Leslie Compton	Citizen
Elizabeth Baber	Citizen
Kathy Williams	Citizen
Sr. Adrian Hofstetter O.P.	Citizen
Marilyn Roach	Citizen
Larry [no last name provided]	Citizen
Laci Osborne	Citizen
Patricia Metcalf	Citizen
Ellen Woods Ramey	Citizen
Phyllis Florman	Citizen
Maria Vansickle	Citizen
Missi Baker	Citizen
Joanna Loomis	Citizen
Barbara J. Gardner	Citizen
Bixler W. Howland	Citizen
Jennifer L. Click	Citizen
Dory Hudspeth	Citizen
Jennie L. Stanley	Citizen
Marcy Allen	Citizen
Andrew Castle	Citizen
Ellen Burt	Citizen
Rene Thompson	Citizen
Toni Meriah Kruse	Citizen
Joe Gorsick	Citizen
Molly Newman	Citizen
Keith Brown	Citizen

David Svetich	Citizen
Fonda Butler	Citizen
Thomas Johnston	Citizen
Sara [no last name provided]	Citizen
Ann Hoenscheid	Citizen
David Gentry	Citizen
Grant Randall	Citizen
Constance Dorval	Citizen
Gail P. Cleveland	Citizen
Jessie Noble	Citizen
Nahtanha Hering	Citizen
Dona Wells	Citizen
Tom Musgrave	Citizen
Shawn Jones	Citizen
Katy Coleman	Citizen
Ivonne Rovira	Citizen
Keith Jones	Citizen
Carla Baumann	Citizen
Robin Lancaster	Citizen
Mary S. Fulk	Citizen
William Jackson	Citizen
Denny Longsworth	Citizen
Gary Boggess	Citizen
Jeff Garretson I	Citizen
D. Catherine Miller, MD	Citizen
Dorene Burke	Citizen
James Parson	Citizen
Lisa Harris	Citizen
Emily Boone	Citizen
Barbara Rathmann	Citizen
John Mccarty	Citizen
Adam Kenter	Citizen
Nancy Caudill	Citizen
Bob [no last name provided]	Citizen
Debra Ezzell	Citizen
Sofia Jozefowicz	Citizen
Louis Larson	Citizen
Delores Eisenbeis	Citizen
Roberta Burnes	Citizen
B. Briggs	Citizen
Sean Detisch	Citizen
Virginia Kutak	Citizen

Misty Haas	Citizen
Casey Hinds	Citizen
Brandon M. Sergeant	Citizen
Kenny [no last name provided]	Citizen
Teresa O'Connor	Citizen
Edward Hughes	Citizen
Razia Husain	Citizen
Jan Marshall	Citizen
Denise Fletcher	Citizen
Dierdra Thompson	Citizen
Shelby Livers	Citizen
Marian D. Willard	Citizen
Doris [no last name provided]	Citizen
Andrew [no last name provided]	Citizen
Dawn Butler	Citizen
Edward Zaragoza	Citizen
Jeff [no last name provided]	Citizen
Rose W. Garden	Citizen
Arnita Booth	Citizen
Charlotta Norby	Citizen
Tim Blair	Citizen
Karen Gauthier	Citizen
Tova Shinall	Citizen
JoAnn Borntrager	Citizen
Cheryle [no last name provided]	Citizen
Patricia Alexander	Citizen
Dorita Stinnett	Citizen
Todd Florence	Citizen
William Fowler	Citizen
Ken Bowman	Citizen
Traci Taylor	Citizen
Jane A Miller	Citizen
Kelly Cline	Citizen
Robert Hartz	Citizen
Kerri Raymer	Citizen
Tom Wallace Lyons	Citizen
Andy Wild	Citizen
Francesca Rogier	Citizen
Delmer Lay Jr	Citizen
Kim Glindmeyer	Citizen
Gil Fauber	Citizen
Charles Wiley	Citizen

Lee Torabi	Citizen
Barbara Hood	Citizen
Vicki Terrell	Citizen
Jan Scherrer	Citizen
Sarah [no last name provided]	Citizen
Kathy Werking	Citizen
Tom Wanner	Citizen
Lesley Lusher	Citizen
Mary Fletcher	Citizen
Julie Pauly	Citizen
Judy Mason	Citizen
Fannie Madden-Grider	Citizen
Thomas Herrick	Citizen
Paul [no last name provided]	Citizen
Nick Moore	Citizen
Delvan Ramey	Citizen
Carmel Wallace, MD	Citizen
Cynthia Hoskin	Citizen
Scott Clark	Citizen
Diane Chase	Citizen
Sue Mize	Citizen
Amy Beth Able	Citizen
Jerry Barnaby	Citizen
Christine Shikenjanski	Citizen
Jessica Muncy	Citizen
Matthew Fraider	Citizen
Tammy Gray	Citizen
Roger Givens	Citizen
Tyler Sanslow	Citizen
Brad Barr	Citizen
Mindy Antonchak	Citizen
Bernard Steinhoff	Citizen
Margaret Burge	Citizen
David A. Browning	Citizen
Roger Perrone	Citizen
Jacqueline Cober	Citizen
Kimberly Colley	Citizen
Mary E. O'Dell	Citizen
Bonnie Lucas	Citizen
Sheila Wulf	Citizen
Sue Holloway	Citizen
Keiron O'Connell	Citizen

Mindy Miller	Citizen
Steve Henry	Citizen
Sune Frederiksen	Citizen
Lucy Arthur-Paratley	Citizen
Nedra Lundberg	Citizen
Max Wineinger	Citizen
Cynthia Dunn	Citizen
Scott Whitlow	Citizen
Sara Talbot	Citizen
Kim Sunseri	Citizen
Susan Sampson	Citizen
Helene Chlopan	Citizen
Leslee Hellmann	Citizen
Bill Flarsheim	Citizen
Annilee Perkins	Citizen
Jan Sharpe	Citizen
Arthur Hardin	Citizen
Michele Hulsey	Citizen
Jeff Wiles	Citizen
Susan Curry	Citizen
Amy Menze	Citizen
K.L. Sallee	Citizen
Gaines Hall	Citizen
Roger Akers	Citizen
Mary T. Terlau	Citizen
David Sampson	Citizen
Tonya [no last name provided]	Citizen
James Dowell	Citizen
Susan Hughs	Citizen
Jacqueline Harrison	Citizen
Gerald Mcpherson	Citizen
Gary Cooper	Citizen
Hunt Helm	Citizen
Gary Green	Citizen
Cynthia Showalter	Citizen
Greg Stamper	Citizen
Beverly Byrum	Citizen
Steven McCulloch	Citizen
Leslie Sims	Citizen
Charles Suddeth	Citizen
Elizabeth Gail Adam	Citizen
Madelaine Enochs	Citizen

Randall Wright	Parent
Rich Wilkinson	Citizen
Jean Christensen	Citizen
Ed Eastridge	Citizen
Joan Mcgregor	Citizen
Janna Unger	Citizen
Beverly Martin Daly	Citizen
Courtney Hart	Citizen
Shannon G. Abbott	Citizen
Betsy Wiley	Citizen
Hunter Bradley	Citizen
Gail Allen	Citizen
Mary Ann Stenger	Citizen
Michele Reilly	Citizen
LaVonne Fingerson	Citizen
Loren Townsend	Citizen
Roger Pearson	Citizen
Randy Smith	Citizen
Charles Wheatley	Citizen
Letitia Ross	Citizen
Matthew Wagner	Citizen
Judy Hutchison	Citizen
Kathleen Maguire	Citizen
Marcia McDermott	Citizen
Rodford E. Smith	Engineer
Camille Norman	Citizen
Rosa Halcomb	Citizen
Emma Engelman	Citizen
Maxye S. Henry	Citizen
Judith Prats	Citizen
Ben Yandell	Citizen
Monica Turner	Citizen
Rebecca [no last name provided]	Citizen
Ashley Hogue	Citizen
Laura Whiting	Citizen
Jaine Novosel	Citizen
Ann W. Olson	Citizen
Deborah Roig	Citizen
Elizabeth Packard	Citizen
Marlon Linton	Citizen
Phil Taylor	Citizen
Caitlin G Myron	Citizen

Margaret Crowder	Citizen
Steve Sweeney	Citizen
Chris [no last name provided]	Citizen
Priscilla Diamond	Citizen
Jed Turner	Citizen
Tabitha Hodges	Citizen
Bridget Shen	Citizen
Vaughn Plummer	Citizen
Robert Valentive	Citizen
Thomas Donohue	Citizen
Leslie Jancovich	Citizen
Sandy W. Wolford	Citizen
Chris Shaffer	Citizen
Len Press	Citizen
Kimberly Mohammed	Citizen
Sondos Al Sad	Citizen
Julie Dinwiddie	Citizen
Kathleen Davis	Citizen
Samantha Duncan	Citizen
Mary Caric	Citizen
Donna Anderson	Citizen
Joe Phelps	Citizen
Joseph D. Chappell	Citizen
Holly Vincent	Citizen
Sheila Coughlin	Citizen
Deb Shoss	Citizen
Virginia Madison	Citizen
David [no last name provided]	Citizen
Joey Stevenson	Citizen
Kerry Zack	Citizen
James L Dickinson	Citizen
Eric Ferguson	Citizen
Jean Sparrow	Citizen
Sharon Halligan	Citizen
Fiona Young-Brown	Citizen
Emily Bingham	Citizen
Robert Thrun	Citizen
Mike Kenney	Citizen
Ann Murphy	Citizen
Carl Lee	Citizen
Dean [no last name provided]	Citizen
Michael Minter	Citizen

Kristina [no last name provided]	Citizen
John Spence	Citizen
Kathleen Davis	Citizen
Pamela Parrott	Citizen
Dwight Billings	Citizen
Timothy Krzywiseau	Citizen
Robin Hollis	Citizen
Roma Prindle	Citizen
Samantha George	Citizen
Meredith S. Grider	Citizen
Sabra Crockett	Citizen
Keith Deaton	Citizen
Deborah Vollbracht	Citizen
Erica Pantalion	Citizen
Rebecca [no last name provided]	Citizen
Barbara Slater	Citizen
Jimmy Blankenship	Citizen
Elli Pace	Citizen
Stacey Wagoner	Citizen
Corrie McClain	Citizen
Rosalie Kleopfel	Citizen
Sharon Mc Donogh	Citizen
Sheila Hoffman	Citizen
Nina Doan	Citizen
Stephanie Frazure	Citizen
Jamie [no last name provided]	Citizen
Terry Terry	Citizen
Bill Bowling	Citizen
Steve [no last name provided]	Citizen
Lauren Mauser	Citizen
J.D. Lester	Citizen
Jim Schmitz	Citizen
James Norton	Citizen
Tyler Wilham	Citizen
Ben Clay	Citizen
Cannon Applegate	Citizen
BJ Carpenter	Citizen
Katie Kneislev	Citizen
Deborah Haggard	Citizen
Helga Gilbert	Citizen
Catherine Clement	Citizen
Blair Gibeau	Citizen

Sharon Mofield-Boswell	Citizen
Greta Ratliff	Citizen
Joel Royalty	Citizen
Eliza Petzinger	Citizen
Emaline Gray	Citizen
Don Jones	Citizen
Kathleen Lesperance	Citizen
Julie Daniels	Citizen
Debi Wells	Citizen
George Kolbensschlag	Citizen
Stephanie Wing	Citizen
John Randolph	Citizen
Amanda Mussetter	Citizen
Amy Gower	Citizen
Cathy Vigor	Citizen
Susan Boggs	Citizen
Barbie Hutcherson	Citizen
Thomas E. Gaston	Citizen
Kayla Roach	Citizen
Susan M. Crosswait	Citizen
Judy Tyler	Citizen
Kate Wheeler	Citizen
Sonja Mather	Citizen
Emily Victoria Williams	Citizen
Alan Alsup	Citizen
Dana J. Brown	Citizen
Myles Marcovitch	Citizen
Jayne Haslam	Citizen
Jody Cofer	Citizen
Susan Stempel	Citizen
Allison [no last name provided]	Citizen
Morgan Phillips	Citizen
Karima Abdullah	Citizen
Nick Taylor	Citizen
Paula Lachapelle	Citizen
William Wilkinson	Citizen
Libbie Sherman	Citizen
Todd Gilmet	Citizen
Kathy [no last name provided]	Citizen
Ken [no last name provided]	Citizen
Sean Smith	Citizen
Chad Brambley	Citizen

George Ella Lyon	Citizen
Julia E. Lewis	Citizen
Georgia Doukas	Citizen
Katie Bush	Citizen
Sarah O’Koon	Citizen
Christina Bronaugh	Citizen
Jill Lauroesch	Citizen
Linda [no last name provided]	Citizen
Brad Houck	Citizen
Linda [no last name provided]	Citizen
Sherman Robert Partin	Citizen
Joseph D. Smith	Citizen
Amy Marshall	Citizen
Amy Kirk	Citizen
Chris Robbins	Citizen
Eve Hiatt	Citizen
Pattie Stivender	Citizen
Bobby Ray	Citizen
Jeremy Rogers	Citizen
Rebecca Holbert	Citizen
Diane Lewis	Citizen
Teri Corson	Citizen
Ken Oliver	Citizen
Stacey Mills	Citizen
Lisa [no last name provided]	Citizen
Molly Tackett	Citizen
Karen Dobson	Citizen
Steven Katz	Citizen
Larry [no last name provided]	Citizen
Leeann Bernier	Citizen
Nathan Meyer	Citizen
Will Connell	Citizen
Katie Jarrett	Citizen
Lucy [no last name provided]	Citizen
Mark Romanelli	Citizen
Joe Knoepfler	Citizen
Pat Whitlow	Citizen
Charles McCoy	Citizen
J.L. Parsons	Citizen
Mary Ann Conlon	Citizen
J. Manning	Citizen
Randy Bailey	Citizen

Carl Root	Citizen
Louis Leslie	Citizen
Amanda Kilmer	Citizen
Catherine Sherron	Citizen
Matthew Heath	Citizen
Heather Lyons	Citizen
Brenda Clay	Citizen
Doris [no last name provided]	Citizen
Don Weber	Citizen
Jodi Lees	Citizen
John Engelman	Citizen
Barbara Combs	Citizen
Mary Welp	Citizen
Henry Hendrix	Citizen
Mary Ellen Hackman	Citizen
Joan Duncan	Citizen
Gordon [no last name provided]	Citizen
Jennifer Havens	Citizen
Elisia Cohen	Citizen
David Seidenfaden	Citizen
David Stewart	Citizen
Ruth Gehres	Citizen
Barbara Haller	Citizen
Tina Stith	Citizen
Loys Mather	Citizen
Thomas Reed	Citizen
Joyce Henderson	Citizen
Ann Olsen	Citizen
Abbey Poffenberger	Citizen
Aaron Richards	Citizen
Loretta Howard	Citizen
Erica Roth	Citizen
John Metzler	Citizen
Bev Metzler	Citizen
J.B. Johnson-Allen	Citizen
Paul Downs	Citizen
Lois McWhorter	Citizen
Margaret Coyne	Citizen
Donna Becher	Citizen
Paul Schrader	Citizen
Eleanor Forsythe	Citizen
Raquel [no last name provided]	Citizen

Karamy Renfrow	Citizen
Ted Zaragoza	Citizen
Tracy Peck	Citizen
Georgia [no last name provided]	Citizen
Jacquelyn Thompson	Citizen
Marge Keller	Citizen
Suzanne Meeks	Citizen
Barbara W. Simmons	Citizen
Kyle Bocko	Citizen
Michael Maier	Citizen
Delores Snellen	Citizen
Bill Fath	Citizen
Paul Tinch	Citizen
Susan Fangman	Citizen
Betty Weaver	Citizen
J.C. Adams	Citizen
Michael Gramling	Citizen
Mike Polak	Citizen
Catharine Gibson	Citizen
Brad [no last name provided]	Citizen
Joanna Faber	Citizen
Tom Schmitt	Citizen
Kenneth Napper	Citizen
Hobe Withers	Citizen
Michelle Adaway	Citizen
Gina McGraw	Citizen
Lisa Lyford	Citizen
Sandra Wardwell	Citizen
Mary Newton	Citizen
Erica O'Brien	Citizen
John Niehaus	Citizen
Beau Irving	Citizen
Jennifer Bell	Citizen
Tara O'Donnell	Citizen
Ed Swain	Citizen
Rick Hughes	Citizen
Sonya Worthington	Citizen
Robert Clark	Citizen
Mary Fehrenbacher	Citizen
James Locke	Citizen
Randall Eades	Citizen
Jeffrey Segal	Citizen

Matilda Scott	Citizen
Kay [no last name provided]	Citizen
Angie Guion	Citizen
William Sariego	Citizen
Cindy Mcknight	Citizen
Richard Naas	Citizen
Joann Ray	Citizen
Craig Oliver	Citizen
Michael Cunningham	University Educator
Dale Johnson	Citizen
Candace Jones	Citizen
Jesus Hazas, B.Sc., Physics	Citizen
Bob and Phyllis Terrell	Citizens
Josh Griggs	Citizen
Anne Stiene-Martin	Citizen
L. S. Campbell	Citizen
Ann Broadhurst	Citizen
Sandy Pike	Citizen
Cheri Eskridge	Citizen
William G. Degen	Citizen
Lisa Pettrey	Citizen
Dean Hite	Citizen
Karen Seidler	Citizen
K. Worthen	Citizen
Rose Lege	Citizen
Christina Thomas	Citizen
Eugene Knapp	Citizen
Connie N. Paynter	Citizen
Betty Rudder	Citizen
Lee Fletcher	Citizen
Perry Moore	Citizen
Alice Newman	Citizen
Andrew Brown	Citizen
Landra Lewis	Citizen
Sarah [no last name provided]	Citizen
Jeremy Grizzle	Citizen
Cynthia Star	Citizen
Lisa Sons	Citizen
Mary Rust	Citizen
Richard LeMaster	Citizen
Michael G. Christerson	Citizen
Mary Kirkman	Citizen

Tracey Meyers	Citizen
Sandra Grossl	Citizen
Laurie [no last name provided]	Citizen
Patricia W. Oliver	Citizen
Doug Cottrell	Citizen
Lisa Goldberg	Citizen
Noelle Smith	Citizen
Heather Adamkiewicz	Citizen
Rebecca Wren	Citizen
Janet Apple	Citizen
Robert Wooldridge	Citizen
James A. Wille	Citizen
Agatha Rigdon	Citizen
John [no last name provided]	Citizen
Audrey Morrison	Citizen
Mason Newman	Citizen
Jacqueline Dickerson	Citizen
Carmen Carter	Citizen
Scott Whitehair	Citizen
Susan Bell	Citizen
Jamie Edwards	Citizen
Ezra Haggard	Citizen
Jeremy [no last name provided]	Citizen
Latricia Riley	Citizen
Ann W. Diego	Citizen
Benjamin R. Senninger	Citizen
Carole Fair	Citizen
Adam Taylor	Citizen
Marcia [no last name provided]	Citizen
John Swindells	Citizen
Linda Connolly	Citizen
Ashlea L. Shepherd	Citizen
Karlyn Schnapp	Citizen
Kelly Wilkins	Citizen
Vicki Morgan	Citizen
Clair Schaub	Citizen
Rose Moore	Citizen
Bill Deatherage	Citizen
Edwina S. Nelson	Citizen
Elizabeth Lorch	Citizen
Beverly Jones	Citizen
Sherrie Davison	Citizen

Kathie Burden	Citizen
Alan Golding	Citizen
Carol Huber	Citizen
Heather Huber	Citizen
Lauren Bridges	Citizen
Janet New	Citizen
Theresa Ambs	Citizen
Dana Conway	Citizen
Dana Hees	Citizen
Richard Murc	Citizen
Mary K. Faulhaber	Citizen
Esther Murphy	Citizen
Mary Mohr	Citizen
Megan McCoy	Citizen
Rick Johnson	Citizen
Donald Sands	Citizen
Patricia Swearingen	Citizen
Danise Newton	Citizen
Matthew Penn	Citizen
Mary Freitag	Citizen
John T. Feris	Citizen
Joelyn Prather	Citizen
Tana Wright	Citizen
Charlesann Garrett	Citizen
Frank F. Coffey	Citizen
Shannon Bear	Citizen
Lisa Black	Citizen
Margie D. Lannum	Citizen
Robert Lorch	Citizen
M. Scott Adams	Citizen
Anne Storey	Citizen
Ruth Webb	Citizen
Rick [no last name provided]	Citizen
Hannelore Goldberg	Citizen
De Sledge [no other name provided]	Citizen
Julie Watts-Baker	Citizen
David Contarino	Citizen
John S. Lowry	Citizen
Crystal Gosto	Citizen
Jeanne Kalvar	Citizen
Walter Hill	Citizen
Sherry Turner	Citizen

Tiffany Madison	Citizen
Chasati McCowan	Citizen
Glenye Oakford	Citizen
James A. Williams	Citizen
Peter Bodnar	Citizen
Jan Weber	Citizen
Michael Hildreth	Citizen
Dorothy Poppe	Citizen
James Kanan	Citizen
Karen Simms Tolson	Citizen
Karen Marks	Citizen
Keith Frazier	Citizen
T.J. Thomas	Citizen
Rita Swan	Citizen
Matthew Falk	Citizen
Nancy Fouser	Citizen
Rick Tabb	Citizen
Kevin Graves	Citizen
Deidre [no last name provided]	Citizen
Belinda Stanley	Citizen
Jason Thierbach	Citizen
Joye Spinks	Citizen
Missy Lockett	Citizen
Ashley Joyner	Citizen
Ann Snider	Citizen
Andrew Jameson	Citizen
Greg Crabb	Citizen
Richard Carlson	Citizen
John Timm	Citizen
Bonnie Mack	Citizen
Anita Stamper	Citizen
Veeko Lucas	Citizen
Arlene Tuttle	Citizen
Saima Ritchie	Citizen
Andy Mead	Citizen
James Roach	Citizen
Maureen Saxon	Citizen
Tiya Todd	Citizen
Jack Holley	Citizen
Dionne [no last name provided]	Citizen
Ana Rodriguez	Citizen
Andrea Mitchell	Citizen

Dana Duncan	Citizen
Kurt [no last name provided]	Citizen
Amy McCorkle	Citizen
Melissa Kelley	Citizen
Mariam Levy	Citizen
Elizabeth Lemerise	Citizen
Leah Pigram	Citizen
William Slone	Citizen
Melanie Mills	Citizen
Gary W. Potter	Citizen
Stephanie Britt	Citizen
Ian Ellis	Citizen
John Hettinger	Citizen
Kyle Brewer	Citizen
Michael Trover	Citizen
Jeff Pierson	Citizen
Michele Wright	Citizen
Dave Melendy	Citizen
Kathryn Eckert	Citizen
Amy Wernette	Citizen
Susannah Woodcock	Citizen
Elise Baucum	Citizen
Florence Saltzman	Citizen
April Baker	Citizen
LouAnn Kruse	Citizen
Mary Marquardt	Citizen
Nicholas Miller	Citizen
Catherine Morton Ward	Citizen
Ada skillern	Citizen
Aimee Thornton Imes	Citizen
Wayne Fowler	Citizen
Richard Horn	Citizen
Anetha Ratliff	Citizen
Kimberly Ann Valentine	Citizen
Wayne Bonnett	Citizen
Weston Worthington	Citizen
Christopher Seidler	Citizen
Barry Tanning	Citizen
Barbara Skinner	Citizen
Jason Reid	Citizen
Kelly Wright	Citizen
Jim Clarke	Citizen

Rebecca Perry	Citizen
William Bailey	Citizen
Jennifer Schwab	Citizen
Alison Valentine	Citizen
Terry Harney	Citizen
Kim Vonder Haar	Citizen
Walker Yanarella	Citizen
Art Skinner	Citizen
Ian Mcgee	Citizen
Lorand Sarna	Citizen
Rachel Sanders	Citizen
Mel [no last name provided]	Citizen
Joe Cinquina	Citizen
Michael Taylor	Citizen
Erin Smith	Citizen
Milenia [no last name provided]	Citizen
Brian A. Williams	Citizen
Jamae Fusilier	Citizen
Marie Shafe	Citizen
William Floyd	Citizen
Frances O'Connor	Citizen
Lora Unthank	Citizen
M. Coates	Citizen
Linda Leeser	Citizen
Ronald Kestler	Citizen
Tammy L. Bright	Substitute Teacher
Donna Tyus	Citizen
Cecilia Watkins	Citizen
Jennifer Monarch	Citizen
Jackie Rubin	Citizen
Jackie Rubin	Citizen
C. Michael Nelson	Citizen
Debbie Barber	Citizen
Tim Evans	Citizen
David Tufts	Citizen
Nathan Link	Citizen
Kathi Clayton	Citizen
Sam Sloss	Citizen
Kelli Bennett	Citizen
Roger Noe	Citizen
Jan Wise	Citizen
Catherine Mekus	Citizen

Sherwood Thompson	Citizen
Bill Young	Citizen
Jay Brandt	Citizen
Eric T. Morrow	Citizen
Amy Hunley	Citizen
Patricia Pointer	Citizen
Pat Tully, Jr	Citizen
Joseph Riehm	Citizen
M.B. Hyden	Citizen
Jack Ashworth	Citizen
Ryan Holliday	Citizen
Jennifer Lawrey	Citizen
Ed Waggemer	Citizen
Levetta Perry	Citizen
Sharon Suddeath	Citizen
Amanda Proietti	Citizen
Neha Angal	Citizen
Rick Freeman	Citizen
Rena Duncan	Citizen
Zenolia Miller	Citizen
Beverly Rockwell	Citizen
Joe Anne Overstreet	Citizen
Melvia Means	Citizen
Teresa George	Citizen
Hilary Jarvis	Citizen
Alfred Shapere	Citizen
Betty [no last name provided]	Citizen
William Wharton	Citizen
Jennifer Ray	Citizen
Suzanne Wooldridge	Citizen
Barbara A. Fiehn	Citizen
Dana Grothaus	Citizen
Sue Bione-Grevious	Citizen
Wilma Osborne	Citizen
Michael Van Leeuwen	Citizen
Christine R. Conley	Citizen
Don Shepherd	Citizen
Chris Keyser	Citizen
Ben Overgaauw	Citizen
Nick Bierman	Citizen
Tink Boord-Dill	Citizen
Lindsay Slack	Citizen

Joshua [no last name provided]	Citizen
Michelle [no last name provided]	Citizen
Stephanie Reynolds	Citizen
Gail Keam	Citizen
Laura Thiemann	Citizen
J. Patrick	Citizen
Donald A. Seeger	Citizen
Steven Fife	Citizen
Kathleen Logan	Citizen
Jennifer Mick	Citizen
Mary Keltner	Citizen
John Russ	Citizen
William Deines	Citizen
Terry Foreman	Citizen
Martha Keen	Citizen
Melody Nutt	Citizen
Jerry Farris	Citizen
Mr. David Floyd Baker	Citizen
John Cronin	Citizen
Greg Cardwell-Copenhefer	Citizen
Jennifer Wilkins	Citizen
Tyler Mayfield	Citizen
Stewart S. Farrar	Citizen
Barry Griggs	Citizen
Kathy Thomason	Citizen
Teri Kimbro	Citizen
Susan Mann	Citizen
Myra Lewis	Citizen
Sheila Welsh	Citizen
Sharon Holder	Citizen
Ross E. Murray	Citizen
Jessica Farquhar	Citizen
Donna Pearson	Citizen
Vicki Evans	Citizen
Stanley Devoogd	Citizen
Sarah Franklin	Citizen
Linda Heck	Citizen
Claire [no last name provided]	Citizen
Jennifer Thierman	Citizen
Angela Jones	Teacher
Madison Moore	Future Science Teacher
E. Stewart	Citizen

Megan Poole	Citizen
Jerry Hacker	Citizen
Nancy Back	Citizen
Jeremy Krueger	Citizen
Gene Lege	Citizen
Holly Brown	Citizen
Ray Sabbatine	Citizen
Laura Hays	Citizen
Theresa Crocker	Citizen
Melba Smith	Citizen
James Norris	Citizen
Elizabeth Turley	Citizen
Jules Arnold	Citizen
Kyle Rinne	Citizen
Stephanie Hlavacek	Citizen
Scott Evans	Citizen
Carla Bevins	Citizen
Alicia Vertrees	Citizen
Joyce Minkler	Citizen
Amanda [no last name provided]	Citizen
John Mulligan	Citizen
Julia Teague	Citizen
William Pitts	Citizen
Francis Roberts	Citizen
Melissa Stewart	Citizen
James Stewart	Citizen
Billy R. Paxton	Citizen
Kurtis Kerr	Citizen
Rich Williams	Citizen
Tom Tomlinsons	Citizen
James Carrico	Citizen
Melissa Vandenberg	Citizen
Larry Lannum	Citizen
Adrian Columbia	Citizen
George Herring	Citizen
David Crawford	Citizen
Jeanne Doom	Citizen
Paul Dendy	Citizen
Jennifer Clark	Citizen
John Wilkins	Citizen
Barb Wiedeman	Citizen
Brenda Bartella Peterson	Citizen

James [no last name provided]	Citizen
Sharon Thomerson	Citizen
Austin Reed	Citizen
Rochelle Zegart	Citizen
Joseph Black	Citizen
Stacy Stark	Citizen
Melissa Moorer	Citizen
Michael [no last name provided]	Citizen
Paul H Jones	Citizen
Mary Kay Fleming	Citizen
Ann Kersker	Citizen
William Rosenbaum	Citizen
Theresa Shoup	Citizen
Nancy Givens	Citizen
Laurel Armar	Citizen
Lora Cox	Citizen
Bettina Morrish	Citizen
Louise Malone	Citizen
Matt Dearmond	Citizen
Patricia Schiller	Citizen
Martin Schiller	Citizen
Judy Hanekamp	Citizen
Joan Lindop	Citizen
David Lynn	Citizen
Paul D. Simmons	Citizen
Kay F. Armstrong	Citizen
Robert Bevins	Citizen
Jill R Doty	Citizen
Carol Trainer	Citizen
Gary Verst	Citizen
Kevin Stinson	Citizen
P. Sullivan	Citizen
Glenna Harris	Citizen
Jerry Sumney	Citizen
Matt Lowerys	Citizen
Chaz Bush	Citizen
Gary L. Criswell	Citizen
Marlisa Deaton	Citizen
Dr. Daniel Kirchner	Citizen
Clarence and Mary Barton	Citizens
Elmer Maggard	Citizen
Kim Watkins	Citizen

Debra Harlan	Citizen
Jane Charmoli	Citizen
Richard Allison	Citizen
Henrietta Kemp	Citizen
Kay Enlow	Citizen
Rob Markham	Citizen
Pauline Keene Looney	Citizen
George Sales	Citizen
Harold Trainer	Citizen
Allan Upchurch	Citizen
James Grubola	Citizen
Margaret Romeril	Citizen
Geoff Ruscoe	Citizen
Ruth Burger	Citizen
Tanya Ebersohl	Citizen
Rona Hopper-Quiggins	Citizen
Crystal Collins-Camargo	Citizen
Margaret A. Chowning	Citizen
Dana Wallingford	Citizen
Thomas Houchin	Citizen
William E. Parker	Citizen
Linda Griffin	Citizen
Becky West	Citizen
Dan Gosser	Citizen
David Weatherly	Citizen
Debra Simpson	Citizen
Sara Settimi	Citizen
Helen [no last name provided]	Citizen
John Perkins	Citizen
Jane Roth	Citizen
Stephanie Kingston	Citizen
Karen Kidwell	Citizen
Colleen Ambrose	Citizen
James Hunte	Citizen
Carol Ann Robrahn	Citizen
Barbara Baker	Citizen
Mollie Bowers	Citizen
Shane O'Bryan	Citizen
Sharon Bohannon	Citizen
Ian Schill	Citizen
Susan Tomlin	Citizen
Philip Prenzel	Citizen

Cynthia F Denney	Citizen
Evalynne Elias	Citizen
Ben Murphy	Citizen
Michael Wilhelmus	Citizen
James P. Casteel	Citizen
Valerie Bock	Citizen
Marge Fitzgerald	Citizen
Anthony Elam	Citizen
Julia Risen	Citizen
Laura Engelman	Citizen
John Howie	Citizen
Daniel Collins	Citizen
Megan Russell	Citizen
Lawrence Gettleman	Citizen
Tom Kelly	Citizen
Thornton Bryan	Citizen
Amanda Mefford	Citizen
Janet Holland	Citizen
Crystal L. Dean	Citizen
Soreyda Benedit-Begley	Citizen
Thomas Ray	Citizen
Joseph R Berger,MD	Citizen
Tad Mutersbaugh	Citizen
Rachel Tugon	Citizen
Debbie Bogenschutz	Citizen
Peggy Reeves	Citizen
Rob Yoder	Citizen
Elmer Craig	Citizen
Bobbie Martin	Citizen
Carmella Esarey	Citizen
Jean Tate	Citizen
Marcellia Lother	Citizen
Joan Cochran	Citizen
Angel Martinez	Citizen
Bill Newsome	Citizen
Carol Scott	Citizen
Joshua Bowman	Citizen
Catherine Bell	Citizen
Andrew Spencer	Citizen
Richard S. Levine	Citizen
Smetana Family	Citizen
Laura Dennis	Citizen

Kay Alexander	Citizen
Renbin Yan	Citizen
Marcella Floyd	Citizen
Nancy Thompson	Citizen
Rachelle Henson	Citizen
Charlotte Lakers	Citizen
Suzanne Beams	Citizen
Mary Lou Young	Citizen
Robert Young	Citizen
Mark Morrow	Citizen
Blake Sugarman	Citizen
Beverly Johnson-miller	Citizen
Gloria Kemper-O'Neil	Citizen
Judith Lyons	Citizen
M. A. Carletta	Citizen
Jackie Lenahan	Citizen
Betsy Bennett	Citizen
Marc Leibson	Citizen
Bob Smart	Citizen
Cheryl Johnson	Citizen
Geoffrey Brooks	Citizen
Desiree Collins	Citizen
Polly Coombs	Citizen
Vonnell Tingle	Citizen
Estella (Genie) Mixson	Citizen
Ann W. Kummer	Citizen
Annette Mtangi	Citizen
Mark Feather	Citizen
James Rentschler	Citizen
George Karem	Citizen
Cindy Zeller	Citizen
Elaine Digges	Citizen
Mary Osborne	Citizen
Linda Nesbitt	Citizen
Ron Morrison	Citizen
Ann Bowe	Citizen
Teresa Dreckman	Citizen
Frank Domurath	Citizen
Janet Bass Smith	Citizen
Donna Key	Citizen
Carol Barbee	Citizen
Joan Kleine	Citizen

Jen B. Adams	Citizen
Marilyn Tudor	Citizen
Robert Campbell	Citizen
Jon Paul Love Johnson	Citizen
Richard E. (Dick) Shore	Citizen
Robert Osborne	Citizen
Kevin Stokes	Citizen
Diana	Citizen
Paul Evans	Citizen
Billie Stockton	Citizen
John Hayes	Citizen
Daryl Owens	Citizen
Jessica Case	Citizen
Mike Gatton	Citizen
K. Mac	Citizen
Keith Roe	Citizen
Connie Farmer	Citizen
David Wrede	Citizen
Sarah Lynn Cunningham, PE	Citizen
Bev Furnish	Citizen
Diane Stokes	Citizen
Rick Clewett	Citizen
Misty Litton	Citizen
Sharon Vaughn	Citizen
J. Michael McCoy	Citizen
David Regneri	Citizen
Kathleen Regneri	Citizen
Pam Berger	Citizen
Sharon Deatz	Citizen
Paul Amick	Citizen
Justeen Beeles	Citizen
Mona L. Dean	Citizen
Joe Skelton	Citizen
Nancy B. Adams	Citizen
Mary Gerald	Citizen
Rebecca Blankenship	Citizen
Jeanne Nakazawa	Citizen
Tim Brown	Citizen
Steve Kavka	Citizen
Clyde David Burberry	Citizen
Teresa R. Miller	Citizen
James Owen	Citizen

Emily Pruett	Citizen
Ann Fothergill	Citizen
Jerry Yeager	Citizen
Gary Smith	Citizen
Randall Conforti	Citizen
Lynn Wright	Citizen
Margaret Box	Citizen
Constance Story	Citizen
Amy Pemberton	Citizen
Charlene W. Mills	Citizen
Thomas Boland	Citizen
Jordan Engel	Citizen
Dan Delaney	Citizen
Donna Fort	Citizen
David Vislisel	Citizen
Susan Vislise	Citizen
Rex Evans	Citizen
K. John Morrow, Jr.	Citizen
Aaron Tornes	Citizen
Rick Walts	Citizen
Nancy Weber	Citizen
Terry Sundy	Citizen
John Turack	Citizen
Rosellyn Hamblen	Citizen
A. Mobley	Citizen
Susan McGee	Citizen
Eric Lambert	Citizen
Joe Ratterman	Citizen
Laura Starck	Citizen
Robert Campbell	Citizen
Irwin Nahinsky	Citizen
Cara Cooper	Citizen
Teresa Gray	Citizen
Sheila Fields	Citizen
Lewis Meyer	Citizen
Raymond Peters	Citizen
Gayle Sprague	Citizen
Susan Dunaway	Citizen
Mary Touray	Citizen
Karen Habenstein	Citizen
Marilyn Schleyer	Citizen
Jack McKinney	Citizen

Deanne Cooper	Citizen
Lisa Warmbrodt	Citizen
Christian Henkel	Citizen
Janice Austin	Citizen
Mark Bertram	Citizen
Frances Wortham	Citizen
cindy foshee	Citizen
David Wilson	Citizen
Leslie Bebensee	Citizen
Donna Hoffman	Citizen
Judith Inge	Citizen
Adam Parez	Citizen
Noelle Tennis Gulden	Citizen
Joni Burtner	Citizen
Melody Hollis	Citizen
Dorothy B. Cassada	Citizen
Ellen Leichtman	Citizen
EK Prewitt	Citizen
Jude Ferring	Citizen
Ben Culbertson	Citizen
Xenia Culbertson	Citizen
Jack D McKinney	Citizen
Billie Davenport	Citizen
Ron Napier	Citizen
Russ Kroncke	Citizen
Charles H. Wilson	Citizen
Keith Fannin	Citizen
Dr. Richard Fouse	Citizen
Mary K. Leffel	Citizen
Sandra Jull	Citizen
Greg Singlust	Citizen
Camille Skubik-Peplaski	Citizen
Acton Ostling, Jr.	Citizen
Janet Markland	Citizen
William Baldwin	Citizen
Doris Taylor	Citizen
Jerry M. Lowe	Citizen
Josephs [no last name provided]	Citizen
Mike Kasbaum	Citizen
Julie Cox	Citizen
Mary Chan	Citizen
Judith R Greene	Citizen

Becky Griffin	Citizen
Sarah R. Morrison	Citizen
Frederic Harned	Citizen
Virgil [no last name provided]	Citizen
Karl Lietzenmayer	Former Science Teacher
Linda Williams	Citizen
Robert Shepard	Citizen
Krystal Moore	Citizen
Sherry [no last name provided]	Citizen
Donna Counts	Citizen
Bob Stewart	Citizen
Jeff Dycus	Citizen
Ray Crider	Citizen
Sandra Broadus	Citizen
Lana Chaney	Citizen
Melissa Spears	Citizen
Karen Hudson	Citizen
Thomas Filbin	Citizen
Richard M. Duncan	Citizen
Mary Ann Burch	Citizen
Puspito Walson	Citizen
Jerome Strange	Citizen
Phyllis Jones	Citizen
Gina Marquardt	Citizen
Bill Franck	Citizen
Ed Council	Citizen
William John Moody	Citizen
Katy Carlson	Citizen
Bruce Horner	Citizen
Charles Sego	Citizen
Ilona Sego	Teacher, Parent of Meteorologist
Gayle Sprague	Citizen
David Dockstader	Citizen
Sheila Denison	Citizen
Catherine Quillen	Citizen
Jeremy Wallen	Citizen
Kate Wood	Citizen
Frances Mican	Citizen
Alan Fryar	Citizen
M. Judith Broadus	Citizen
Claire Drucker	Citizen
Rachel Cronin	Citizen

Karen [no last name provided]	Citizen
Lowell Fletcher	Citizen
Dennis C. Blain	Citizen
George Schuhmann	Citizen
David Fry	Citizen
Rebecca [no last name provided]	Citizen
Deb Amchin	Citizen
John Freer	Citizen
Susan Burberry	Citizen
Judith Sharp	Citizen
Rev. Albert M. Pennybacker	Citizen
Elizabeth Kleppinger	Citizen
Sarah Tobergta	Citizen
Claudia Runge	Citizen
Joshua W	Citizen
Pat Goodman	Citizen
Krista Kimmels	Citizen
Mindy Murphy	Citizen
Eve Lee	Citizen
Edelgardetker [no other name provided]	Citizen
Cherie Todd	Citizen
Barbara Ankeny	Citizen
Allison Soult	Citizen
Brenda Black	Citizen
Katherine Schaefer	Citizen
Alan Wallace	Citizen
Kimb Penley	Citizen
Patricia R Palms	Citizen
Craig MacInnes	Citizen
Patty Stocker	Citizen
Roni Gilpin	Citizen
Tyler Offerman	Citizen
Ann Ellerkamp	Citizen
Bob Fieberg	Citizen
Mary Joyce Moeller	Citizen
Cordie Steadmon	Citizen
Barbara Steadmon	Citizen
Michelle Harr	Citizen
Kathryn Heggs	Citizen
Andy Washington	Citizen
Sharon K. Williams	Citizen
Sam Norgren	Citizen

Martha Bartlett	Citizen
Philip Curd	Citizen
Tanya Stewart	Citizen
Bonnie Donoho	Citizen
Sunnye Sherman	Citizen
Debra Abukwaik	Citizen
David Roberts	Citizen
Melissa McCreary	Citizen
Vernon R. Wiehe, Ph.D.	Citizen
Judy Roberts	Citizen
Patricia Nazzaro	Citizen
Duane Beachey	Citizen
Gloria Beachey	Citizen
Sarah S. Broomfield	Citizen
Nancy Henly	Citizen
Vicki Doukas	Citizen
Kay Gill	Citizen
Mary Lou Ryant	Citizen
Donna J Redwine	Citizen
Margaret Coe	Citizen
Jim Patrick	Citizen
FranK Schwartz	Citizen
Dennis Thompson	Citizen
Charles Burdsal	Citizen
P.J. Cook	Citizen
Retta Folsom	Citizen
Jeanie Wolfson	Citizen
Robert Rogers	Citizen
Sean Flaherty	Citizen
Warren Van Wyck	Science Teacher
Stephen Dutschke	Citizen
Mark Butler	Citizen
Marilou Couch	Citizen
Dianne Shuntich	Citizen
Katherine Miller	Citizen
Michael Fogler	Citizen
Kyrie Fowkes	Citizen
Kimberly Humble	Citizen
Wanda Fulks	Citizen
Phillip Sammons	Citizen
Shirley Wilson	Citizen
J.T. Netherland	Citizen

Judy Pollard	Citizen
Thomas North	Citizen
Ed Stodola	Citizen
Julie Rothwall	Citizen
David Clark	Citizen
Sr. Margaret Hofstetter	Citizen
Michael Mansfield	Citizen
Maria Bongo	Citizen
Mark Gamble	Citizen
Ben Cleinmark	Citizen
Dan Roller	Citizen
David Ambs	Citizen
Brenda Kemp	Citizen
Ronald K Shull	Citizen
Jana Jacobson	Citizen
Gail Minotti	Citizen
Deborah Knittel	Citizen
E. Joy Arnold	Citizen
Tamera Collins	Citizen
Joan Shanahan	Citizen
Laura Manges	Citizen
Cathi Lyninger	Citizen
Jim Grissom	Citizen
Nancy Zanzucchi	Citizen
Brent Rummage	Citizen
Larry Frederiksen	Citizen
Cheryl Cooper	Citizen
Kathleen Filkins	Citizen
Jacqueline Vance	Citizen
Megan Rosenblatt	Teacher
John Walker	Citizen
Dale Warren	Citizen
Sian Versweyveld	Citizen
Jonathan Sarfin	Citizen
Zoe Drake	Citizen
Melissa Lucas	Citizen
Cecile Schubert	Citizen
Rebecca Sivert	Citizen
Laura Knight	Citizen
Mr. Leroy Joseph, Jr.	Citizen
Mrs. Leroy Joseph, Jr.	Citizen
Mary Young	Citizen

Marlene Rust	Citizen
Robert Gwaltney	Citizen
Sean Parkin	Citizen
Sue Speed	Citizen
Margaret Houck	Citizen
Lee Kampf	Citizen
Amanda Velez	Citizen
Marie Tychonievich	Citizen
Mike Gatton	Citizen
Curtis Rowe	Citizen
Joanne Cybulski	Citizen
John Birkimer	Citizen
Katy Schneider	Citizen
Shelly Van Lanen	Citizen
William Andrews	Citizen
Cherie Mutersbaugh	Citizen
Linda Porter	Citizen
Michael Kelly	Citizen
Ronald Thompson	Citizen
Cheri Casey	Citizen
Jonathon Hubbert	Citizen
Susan Gilliamj	Citizen
Fred Gilliamj	Citizen
Melanie Johnson	Citizen
Kathy Musser	Citizen
Patsy Carruthers	Citizen
Thomas F. Moffett	Citizen
Alvin Goldman	Citizen
Kathy Pyles	Citizen
Neil Petersen	Citizen
Kiersten [no last name provided]	Citizen
Jodie Leidecker	Citizen
Frances Hall	Citizen
Vickie McQueary	Citizen
Daniel K. Boyd	Citizen
Henry Walters	Citizen
Lance Brunner	Citizen
Diane Spurlock	Citizen
Ellouise Shepherd	Citizen
Farah [no last name provided]	Citizen
Evelyn B Laux	Citizen
Anita Whelan	Citizen

Janet Yers	Citizen
Trent Taylor	Citizen
Wanda E. DeSpain	Citizen
Robert Bagley	Citizen
Allison Crawford	Citizen
Ralph Brown	Citizen
Anne Deidesheimer	Citizen
Elizabeth Crowe	Citizen
Tom Shearin	Citizen
Kathleen Schings	Citizen
Michael Hall	Citizen
Terry Anne Wiebe	Citizen
Charles M. Houk MD	Citizen
Abby Yelton	Citizen
Katherine Hammons	Citizen
Barbara sutherland	Citizen
Rachelle Bombe	Citizen
Susan Brown	Citizen
John Hendon	Citizen
Dawn Heinecken	Citizen
Rebecca Begley	Citizen
Jeanie Embry	Citizen
Larry Hovekamp	Citizen
Carly Cavitt	Citizen
Mayla McKeehan	Citizen
John Schmitt	Citizen
Jimmy Phelps	Citizen
Barbara Wade	Citizen
Kim Gersony	Citizen
Kenna Smith	Citizen
Kristina [no last name provided]	Citizen
Charles Cusumano, PA-C, DFAAPA	Citizen
Jeff Sames	Citizen
William D. Rumsey	Citizen
Ronald Atwood	Citizen
Roshan Nikou	Citizen
Larry Robertson	Citizen
Barbara Robertson	Citizen
Sandra Kryst	Citizen
Michael Bell	Citizen
Lori Dabney	Citizen
June Sandercock	Citizen

Jama Watts	Citizen
Denise Jones	Citizen
Connie S. Courts	Citizen
Richard Humke	Citizen
Leslie Lehman	Citizen
Marina Sams	Citizen
Vicki Hines-Martin	Citizen
Marie Wathen	Citizen
Cynthia Hamilton	Citizen
Susan Smith-Sargent	Citizen
Barb Campbell	Citizen
Sandra Munn	Citizen
Debbie Maden	Citizen
Eric Mount	Citizen
Sally Davis	Citizen
Leanne Clark	Citizen
Flint Foster	Citizen
Jeanne Groene	Citizen
Marie Miller	Citizen
Elizabeth Nelson	Citizen
Jonathan Corey Blanton	Citizen
Steve Wagner	Citizen
Maggie Murphy	Citizen
Judith Cumbler	Citizen
Sydney Smith	Citizen
Barbara Robbins	Citizen
Shaden [no last name provided]	Citizen
David Dunn	Citizen
Carl Wallace	Citizen
Kathy Pratt	Citizen
Alan Rosedale	Citizen
Ann Hardman	Citizen
Marjorie Kiefer	Citizen
Curt Tweddell	Citizen
Kathy Pepper Baczek	Citizen
Laurel Miller	Citizen
Dr. Michael T. May	Citizen
Kristin Cook	Citizen
Anne Bucalos	Citizen
Robert Craycraft	Citizen
Cathryn Wasson	Citizen
Ronald H. Skees	Citizen

Amberlee Douglas	Citizen
Jen Bolger	Citizen
Bettie Griffin	Citizen
Maggie Noffke	Citizen
Richard Koster	Citizen
Gregory Waldrop	Pastor
Carolyn Dennis	Citizen
Randal Lanham	Citizen
Nelda Moore	Citizen
Nathan Shuler	Citizen
David Henry	Citizen
Ron Russell	Citizen
Dean Bucalos	Citizen
S. Lee Ware	Citizen
Judy P Berger	Citizen
Kate Cunningham	Citizen
L.J. Cassity	Citizen
Timothy Holland	Citizen
Nicholas Alan Johnson	Citizen
Elizabeth Thomas	Citizen
Carrie [no last name provided]	Citizen
Jami Pelini	Citizen
Bethany Brickley	Citizen
Charlotte Stites	Citizen
Trudi Kubik	Citizen
Jeff Brickley	Citizen
Richard Burden	Citizen
Ann Ford	Citizen
Dorothy [no last name provided]	Citizen
Melissa Eden	Citizen
Colin Keefe	Citizen
Melissa Rhodus	Citizen
Ben Goldenberg	Citizen
Mark Meade	Citizen
Loren Drzal	Citizen
Donna Boyce	Citizen
Anna [no last name provided]	Citizen
Eliot Walter	Citizen
Terry Julian	Citizen
Linda Haydon	Citizen
Joseph Michael Satterlee	Citizen
Greg Moore	Citizen

Herbert Phillips	Citizen
Sally Di Giovanni	Citizen
Linda Corbin	Citizen
Isabella Christensen	Citizen
Lisa Shroyer	Citizen
C. J. Robinson	Citizen
Donna McGee	Citizen
John Hammond	Citizen
Linda [no last name provided]	Citizen
Myrtle Bingham	Citizen
Don Robinson	Citizen
Anne Weaver	Citizen
Pat Lenzo	Citizen
Robin Helfers	Citizen
Stephen Webb	Citizen
Sandra C. Bailey	Citizen
Dorothy Poppe	Citizen
Ivan Mayes	Citizen
Wallace McMullen	Citizen
Carol [no last name provided]	Citizen
Lynn Matlock	Citizen
Michael Hannan	Citizen
Karen McCoy	Citizen
Anne Marie de Zeeuw	Citizen
Jenni Ward	Citizen
Gerald Glover	Citizen
Karma Duff	Citizen
Malcolm Watts	Citizen
Lucy Yelton	Citizen
Lori Hitchcock	Citizen
Leslie [no last name provided]	Citizen
Stephen Board	Citizen
Wilma Bennett	Citizen
Betsy Coffey	Citizen
Scott Metcalf	Citizen
Juan Rodriguez	Citizen
Joe Wilson	Citizen
John E. Fischer	Citizen
Lee Amundsen	Citizen
Nancy Underwood	Citizen
Preston Elrod	Citizen
Betsy Osoffsky	Citizen

Rick Meadows	Citizen
Mark Shale	Citizen
Judith T. Owen	Citizen
Billy Ping	Citizen
Anna Gayle Parke	Citizen
Jo Staggs-Neel	Citizen
Ryan R. Riddle	Science Teacher
F. James Holler	Citizen
Patricia Supplee	Citizen
Suzanne Tallichet	Citizen
Karen Schwartz	Citizen
James M. Samuel	Citizen
Henry Southgate	Citizen
Don Glass	Citizen
Robert W. Abrams	Citizen
Teena Blackburn	Citizen
Terry Hancock	Citizen
Arnold Weiner	Citizen
Carol Bischoff	Citizen
Beth Redwine	Citizen
Melissa M. Howard	Citizen
Mike Ackerman	Citizen
Andrew Walker	Citizen
Stephanie Parkin	Citizen
Philip Blades	Citizen
Jeffrey Hampton	Citizen
Richard Knittel	Citizen
Mary Wilson	Citizen
Debbie [no last name provided]	Citizen
Bill Deatherage	Citizen
Annie Adams	Citizen
John Wiggins	Citizen
William Snedegar	Citizen
William T. Thoeny	Citizen
Ann Hicks	Citizen
Charles Davis	Citizen
Lisa Kriner	Citizen
Ronald DeChristoforo	Citizen
Judy Egan	Citizen
Jamie Jacobs	Citizen
Tammy Russell	Citizen
Katherine Ogles	Citizen

Judy Spears	Citizen
Mary Knight	Citizen
George Bebensee	Citizen
Deborah Madison	Citizen
Julie Thompson	Citizen
John Vessels	Citizen
Sara Porter	Citizen
Dave Porter	College Professor
Candice Miller	Citizen
D. Leslie Hill	Citizen
Pam Martin	Citizen
Pamela Brashear	Citizen
C. L Beahan, PhD.	Citizen
Dieter C. Ullrich	Citizen
Tom Boyd, Ph.D	Citizen
B. J. Bentley	Citizen
Joseph Donohew	Citizen
Joseph Brill	Citizen
Shawn Hadley	Citizen
Mary McDaniel	Citizen
Jill Dew	Citizen
Sara Green	Citizen
Linda Jennings	Citizen
J. Eddy	Citizen
Pat Cooper	Citizen
Terry Anderson	Citizen
Charles Noyes	Citizen
Leanna Slusher	Citizen
Katey Ward	Citizen
Kathleen Drury	Citizen
Lavece Hughes	Citizen
Tanya Mount	Citizen
Karen Riggins	Citizen
Judy Munro-Leighton	Citizen
Rick Ader	Citizen
Eileen [no last name provided]	Citizen
Josh Piper	Citizen
Violet Harmon	Citizen
Ivy Brashear	Citizen
Melissa Shown	Citizen
Neil O'Brien	Citizen
Philip Wakeman	Citizen

Tobias Harris W.	Citizen
Jennifer Dugert	Citizen
Buffy Sexton	Citizen
Deanna Katko	Citizen
Larry Devine	Citizen
James Wheeler	Citizen
Ronald E Dean	Citizen
Laurie J. Oldham	Citizen
Carla Gilbert	Citizen
Achille Biagi	Citizen
Eileen Biagi	Citizen
Nancy Bayens	Citizen
Craig Clere	Citizen
Diana Hallman	Citizen
Arkadiy Medvedovskiy	Citizen
Diane Kahlo	Citizen
Peter Pearlman	Citizen
Ruth Bamberger	Citizen
James [no last name provided]	Citizen
Scott [no last name provided]	Citizen
Bruce Spencer	Citizen
Catherine Aponte	Citizen
Katherine Kruska	Citizen
Lenae Price	Citizen
Jennifer Keats	Citizen
Mike Fryman	Citizen
Kay Grubols	Citizen
Patricia Layton	Citizen
L. Beth Stone	Citizen
Donna Strauss	Citizen
Mark Taylor	Citizen
Mary Ellen Buning	Citizen
Ruby Layson	Citizen
Pamela Gray	Parent
Maureen Spencer	Citizen
Thomas S. Meacham	Citizen
Ernie Lewis	Citizen
Beth Gaunce	Citizen
Rachel A Mendoza-Newton	Citizen
Susan Fangman	Citizen
Donald Walters	Citizen
Fairleigh Roman	Citizen

David Nickell	Citizen
Lisa Schmoetzer	Citizen
Kelley Greene	Citizen
Stephen Breeden	Citizen
Elisa Owen	Ordained Pastor
G. Reynolds	Citizen
Chuck Miller	Citizen
Catherine Johnson	Citizen
Bill Bowman	Citizen
Jenny Poole	Citizen
Barbara Hopewell	Citizen
Shifa Podikunju	Citizen
Michael Mills	Citizen
Charles Waller	Citizen
Marion Dobbs	Citizen
Janet Snow	Citizen
Lauren Niemann	Citizen
Jennifer Kearns	Citizen
Rosalie Felfle	Citizen
Holly Adams	Citizen
Stephanie Van Stee	Citizen
Mark Miceli	Citizen
Charlie Lanter	Citizen
Linda Hill	Citizen
Stephanie Hughes	Citizen
Shirlee Yassney	Citizen
Heather Shearn	Citizen
Michelle Weisgrau	Citizen
Blake Price	Citizen
John Stone	Citizen
Robert Daniel	Citizen
Tricia Houston	Citizen
Karen Knowles	Citizen
Lauren Rosenman	Citizen
George Herring	Citizen
Connie [no last name provided]	Citizen
Thomas Crothers	Citizen
David Musser	Citizen
Angie Carlson	Citizen
Ellen Roberts	Citizen
Bettye H Grissom	Citizen
Felicia Messer	Citizen

Gayle Bourne	Citizen
Melanie Martin	Citizen
Roberta Guthrie	Citizen
Clay Gaunce	Citizen
Anne Mitchels	Citizen
Aaron H. Shuford	Citizen
Reanah Tongate	Citizen
James Preslar	Citizen
Betsy Ruhe	Teacher
Jacqueline Newman	Citizen
James Smith	Citizen
Beth Handelman	Citizen
Juliet Neary	Citizen
Brad Zimmerman	Citizen
William Eddy	Citizen
M. Hettinger	Citizen
Ed Crockett	Citizen
Lisa Ruble	Citizen
Rollin Tarter	Citizen
Melinda Newman	Citizen
Sonya Combs	Citizen
Gene R. Graves	Citizen
Gretchen LaGodna	Citizen
Paulette Fiehrer	Citizen
Donna Schiess	Citizen
James Crowden	Citizen
Melanie Smith	Citizen
Timothy Calvert	Citizen
Nancy Carrington	Citizen
David G. Hunter	Citizen
James Vrancic	Citizen
Russell Byrd	Citizen
Robert Stone	Citizen
Pamela ward	Citizen
Tisha Belme	Citizen
George Smith	Citizen
Asri Mumpuni	Citizen
George Zack	Citizen
Tim LeMaster	Citizen
Francis Hennessee	Citizen
Susan L. Smith	Citizen
Kelli Reno	Citizen

Lisa Mo	Citizen
David Adler	Citizen
Teresa Brolley	Citizen
Dr. Terry L. Singer	Citizen
Dwight Baugt	Citizen
Darrell Riffe	Citizen
Matthew Stone	Citizen
Elaine Camerota	Citizen
Will Kinnaird	Citizen
Greg Elliott	Citizen
Patrick Kirby	Citizen
Tricia F Lister	Citizen
Marian [no last name provided]	Citizen
Linda Parker	Citizen
Cathi Kise Blair	Citizen
Roy Sachleben	Citizen
Ian Schill	Citizen
David [no last name provided]	Citizen
Joyce Basil	Citizen
Yvette Evans	Citizen
Christina Randall	Citizen
David Edberg	Citizen
Jeremy Jarratt	Citizen
Lee Gantz	Citizen
John Justice	Citizen
W. Napier	Citizen
Toby Troffkin	Citizen
Susan Vogt	Citizen
Edmund August	Citizen
Marguerite West	Citizen
Stan Holsclaw	Citizen
Lora Malloy	Citizen
Jacob Barrett	Citizen
Phyllis Hawkins	Citizen
Larry Fleming	Citizen
Cynthia Wainscott	Citizen
Barbara Hausman-Smith	Citizen
Carol Dines	Citizen
Teresa Warren	Citizen
Patricia Sisk	Citizen
Ethan Hattendorf	Citizen
T.A. Wineland	Citizen

Midge Tuley	Citizen
Anisa Willis	Citizen
Shelly Whitehead	Citizen
Robert Mayton	Citizen
Howard Stovall	Citizen
Marcia Sparks	Citizen
Beverly Watkins	Citizen
David Reber, Ph.D.	Citizen
Debra Patterson	Citizen
Adrielle Camuel	Citizen
Nathan Jacobs	Citizen
Daniel del Vecchio	Citizen
David Sickbert	Citizen
Stewart Kelley	Citizen
Bert Thomas	Citizen
Roberta Erena	Citizen
Gary McIntyre	Citizen
Kristen Hayden	Citizen
Ray Perkins	Citizen
Liz Dugan	Citizen
Harue Marquardt	Citizen
John Christopher	Citizen
Daniel Storch	Citizen
Jamie Mullans	Citizen
Anna Cropper	Citizen
Hal Harned	Citizen
Jennifer Passoni	Citizen
Nancy Pererson	Citizen
Rene Hales	Citizen
Monica Marcum	Citizen
C.A. Graham	Citizen
Laurene Clark	Citizen
Gary Baker	Citizen
Maria Ward	Citizen
Tony Menechella	Citizen
Robert Mitchell	Citizen
Ken Nelson	Citizen
April Robbins	Citizen
Christina Malone	Citizen
Angel Suarez Valera	Citizen
Maggie Ashmore	Citizen
Irma Bennett	Citizen

Debra Gash	Former Teacher
Dustin Kavich	Citizen
Beth Ratliff	Citizen
Gary Leaf	Citizen
Paul Thoms	Citizen
Bruce England	Citizen
Michael J Denis	Citizen
Bruce Wilkinson	Citizen
David M. Wimsatt	Citizen
Allie Secor	Citizen
Luke Barlowe	Citizen
Robin Maley	Citizen
Dr. Daniel Gatlin	Citizen
Myrisa Christy	Citizen
Carrie Holstrom	Citizen
Robert Urekew	Citizen
Eileen Arnold	Citizen
Dr. David Bliss	Citizen
Andre Faul	Citizen
Kathleen Gregg	Citizen
Barbara Clewett	Citizen
David Aaron Hiles	Citizen
Deborah Denenfeld	Citizen
William Farley	Citizen
Ed Redmon	Citizen
Darlene Mazzone	Citizen
Vicky Parler	Citizen
Jesse L. Ashcraft	Citizen
Rachel Klein	Citizen
Susan Davis	Citizen
Lynette Rollyson	Citizen
Jeffrey [no last name provided]	Citizen
Kevin Bolser	Citizen
Richard Grossbohlin	Citizen
Pamela Slowkowski	Citizen
Dannette Cook	Citizen
David Gale	Citizen
Dan Davis	Citizen
Gary Parish	Citizen
Luann Davis, RN	Citizen
Eric Russell Lynch	Citizen
Simone Salomon	Citizen

Donna Back	Citizen
Shelly Skees	Citizen
Joe Ann Auslander	Citizen
Gary Bowen	Citizen
Andrew B. Bryan	Citizen
Molly McMasters	Citizen
Darlene H Libbey	Citizen
Harry McNally	Citizen
Anne Mckune	Citizen
Gay Holcomb, Ph.D.	Citizen
Billie Lynn Denzik	Citizen
Anna Imber	Citizen
Casey Jones	Citizen
Lloyd Doering	Citizen
Walter Grover	Citizen
Michael Alt	Citizen
Christopher White	Citizen
Ron Spann	Citizen
Richard Mondy	Citizen
Matt Reno	Citizen
Brenda Jones	Citizen
Fran Taylor	Citizen
Rod Huber	Citizen
Nancy Givens	Citizen
Thomas Avery	Citizen
Ruth [no last name provided]	Citizen
Mary O'Neill	Citizen
Adam Taylor	Citizen
Randall Robinson	Citizen
Barbara Arch	Citizen
Scott Meyer	Citizen
Leslie McColgin	Citizen
Nancy K Noble	Citizen
Elizabeth Drake	Citizen
Sean Stanley	Citizen
Joshua Castlen	Citizen
Ted Withrow	Citizen
Dr. Ouida Meier	Citizen
Susan Heustis	Citizen
Lydia Bond	Citizen
Paul Brinegar	Citizen
Stella Godbey	Citizen

Greg Chinn	Citizen
Abigail Byrnes	Citizen
Debbie August	Citizen
Jennifer Cox	Citizen
Sister Rosemary Keough	Citizen
Paula Schoenhoff	Citizen
Susan Crook	Citizen
Carmen Ramirez Walker	Citizen
Patty Coomes	Citizen
Sarah Murphy	Citizen
Catherine Jenkins	Citizen
Roger [no last name provided]	Citizen
Keith Smith	Citizen
Dirk May-Fitzgerald	Citizen
Clyde Sams	Citizen
Matthew Carr	Citizen
Heath Eric	Citizen
Sandra Rippetoe	Citizen
Charles R. III Honce	Citizen
Mike Greenwell	Citizen
LaVerne Waldrop	Citizen
Erica Bricking	Citizen
Dave Luckens	Citizen
Kathleen Myers	Citizen
Carolyn Campbell	Former Teacher
Lon Coleman	Citizen
Zana Lummus	Citizen
William Beasley	Citizen
Hagen Kirk	Citizen
Karen Conley	Citizen
Carie Ernst	Citizen
Wesa-Asgaya K Sweeney	Citizen
John Hampton Jr.	Citizen
Curtis Morrison	Citizen
Mary Love	Citizen
Mikell Grafton	Citizen
Garry Shane Baldrige	Citizen
Kayla Rodgers	Citizen
Tim Fleischer	Citizen
Berry Craig IV	Citizen
Melinda Craig	Citizen
Berry Craig III	Professor Emeritus of History, Western Kentucky

Community Technical College

Troy Richard	Citizen
Renee Boss	Citizen
Lori McDonald	Citizen
Alex Moore	Citizen
Justin Schulte	Citizen
Daniel Mason	Citizen
Dawn Hale	Citizen
Annette Bricca	Citizen
Bert Bruce	Citizen
Peggy Smith-Puckett	Citizen
Angie Reed Garner	Citizen
Frances Englander	Citizen
Dr. Dave Robinson	Citizen
Leigh Furches	Citizen
Chy'anne Krugler	Citizen
James Frank	Citizen
Peter Mcchesney	Citizen
Leslie Leidelmeijer	Citizen
Robert A. Daniel	Citizen
Merry Jones	Citizen
Richard Ralston	Citizen
David Sumrell	Citizen
Malinda [no last name provided]	Citizen
Richard Cales, MD	Citizen
Terry Olson	Citizen
Bill Thomas	Citizen
Linda Heath	Grandmother
Mary Swinford	Citizen
Kelley Paterno	Citizen
M. Ratledge	Citizen
Jim Reeves	Citizen
Edith Belcher	Citizen
Margaret Snyder	Citizen
Ruth Roberson	Citizen
Jeff Keyes	Citizen
David Harden	Citizen
Denise [no last name provided]	Citizen
Aaron Martin	Citizen
Kathy Loebbrown	Citizen
Chris Joy	Citizen
Michael J. Seidler	Citizen

Amanda [no last name provided]	Citizen
Arnold Johnston	Citizen
Gayle Pille	Citizen
Kevin Lloyd	Citizen
JoEllen [no last name provided]	Citizen
Ginny Smith	Teacher
Marcia Hopkins	Citizen
A. Weingardt	Citizen
Michael Bryant	Citizen
Robin K Moody	Citizen
Stephen Kappeler	Citizen
Carol Goodin	Citizen
Diana [no last name provided]	Citizen
R. Brown	Citizen
Melody Nutt	Citizen
Theresa Scherf	Citizen
Andrea Knarr	Citizen
Marlana White	Citizen
Jane Brantley	Citizen
JP Brantley	Citizen
Joshua San Miguel	Citizen
JoAnne Sykes	Citizen
Dr. Richard A. Weber	Citizen
Steve Flora	Citizen
Larry Kruse	Citizen
Marci Coots	Citizen
Bridgit Boggs	Citizen
Soma Bose	Citizen
Stephanie Frank	Citizen
Markeeta Buntin	Citizen
Kyle Fannin	Citizen
Joseph Bugess	Citizen
Jieun K. Han	Citizen
Don E. Crisp	Citizen
Mike Chmilewski	Citizen
Mary Landrum	Citizen
Andy Frueh	Citizen
Barbara Hollar	Citizen
Sam Johnson II	Citizen
Sandra Ochs Griggs	Citizen
Barry Richardson	Citizen
Sabrina McIlwrath	Citizen

Rev. Belinda M Curry	Citizen
Erik [no last name provided]	Citizen
Jean Christensen	Citizen
Gary McCoy	Citizen
Eric Bredemeyer	Citizen
Natalie Hoffman	Citizen
Wade McCallum	Citizen
Jennifer Goetz	Citizen
Jamie Godby	Citizen
L. J. Alquizola	Parent of Student
Martin Z. Kasdan Jr	Citizen
Trent Rogers PhD	Citizen
Tami Brucato	Citizen
John Ivie	Citizen
David [no last name provided]	Citizen
Kristin Hix	Citizen
Frank Doring	Citizen
Thomas J. Reece	Citizen
Derek Obrochta	Citizen
Angela [no last name provided]	Citizen
Julie Bucknam	Citizen
Ellen Glatman	Citizen
Dr. Karen N Janssen	Citizen
Jon Hardy	Citizen
Keith Rouda	Citizen
Derrick Singletary	CPA
Sarah Reddick	Citizen
Ann Kidder	Citizen
Brian Jackson	Citizen
Kathy Stauss	Citizen
Lydia Fuller	Citizen
Naomi Hodges	Citizen
Glenda Grace	Citizen
Virgil Ridings	Citizen
Joel Woltz	Citizen
Donna Hazelwood	Citizen
Samantha Tucker	Citizen
Vickie Hatton	Citizen
Jeff Whittinghill	Citizen
Joan Tighe	Citizen
Edward Prigge	Citizen
Ronnie Trogden	Citizen

Candace Granstaff	Citizen
Allan Smith	Citizen
Jim Nation	Citizen
Sarah Grayson	Citizen
R. Wesley Pace	Citizen
Joe Armstrong	Citizen
Brigette Reed	Citizen
Amanda Bifone	Citizen
William Bishop	Citizen
Randall Lamb	Citizen
John Rice	Citizen
Brian Slone	Citizen
Mike Alexander	Citizen
Genevieve Apodaca	Citizen
Claudia Hargrove	Citizen
Jacuelin Burchett	Citizen
Colleen Crigler	Citizen
Teddy Williams	Citizen
Teresa Smith	Citizen
Spencer Skaats	Citizen
Angela Armato	Citizen
Craig Newman	Citizen
Jerome Lawson	Citizen
Stephanie Ramey	Citizen
David Foushee	Citizen
Patrick McCamish	Citizen
Danny Fletcher	Citizen
Dennis Stafford	Citizen
James Roark	Citizen
Judy Roark	Citizen
Billie Stafford	Citizen
Linda Rose	Citizen
Helen Bloodworth	Citizen
Naomi Webb	Citizen
Anna Reeder	Citizen
Ella Lonas	Citizen
Tammy Skaats	Citizen
Cheryl Sadler	Citizen
Angie Christensen	Citizen
Jay Bond, Sr.	Citizen
Diane Diggles	Citizen
Linda Bryant	Citizen

Charlotte Purcell	Citizen
Donald Inks Jr.	Citizen
Rita Isham	Citizen
Erin Seaman	Citizen
Jay Dargan	Citizen
Jim McHale	Citizen
Tim Boll	Citizen
Sherry Gaines	Citizen
Brenda Kabler	Citizen
Steve Flinchum	Citizen
William Marvel	Citizen
Gary Rogers	Citizen
Randy Riblet	Citizen
Johnny Evans	Citizen
Dedra Smith	Citizen
Marvin Oliver	Citizen
Terry Sears	Citizen
John Sparks	Citizen
Eileen Serke	Citizen
Frank Simon	Citizen
Mary McClendon	Citizen
Gary Buckley	Citizen
Beverly Buckley	Citizen
Roberta Dorsey	Citizen
Velma Newsom	Citizen
Steve Rudy	Citizen
Jaunita Schick	Citizen
Tammy Stewart	Citizen
Colin Bruner	Citizen
Linda Horback	Citizen
Steven Shick Sr.	Citizen
David Bartsch	Citizen
Shirley Mayrand	Citizen
Robert Couvillon	Citizen
Michelle Truitt	Citizen
Sharon Almquist	Citizen
Elsie Hall	Citizen
Glenda Cogan	Citizen
Kimberly Wood	Citizen
JoAnn Davis	Citizen
Steve Lorimer	Citizen

Bobby Alexander	Citizen
Florance Molnar	Citizen
Esther Whitley	Citizen
Kim Houlihan	Citizen
Regina Smith	Citizen
James Champ	Citizen
Ralph Hawkins	Citizen
Ken Collins	Citizen
JoeAnn Collins	Citizen
Regina Eckle	Citizen
Becky Schimdt	Citizen
Amy Meadors	Citizen
Sherian Tingle	Citizen
Pam Yancy	Citizen
Stephen Secchio	Citizen
Angela Rankin	Citizen
Paul Gross	Citizen
Rob Jones	Citizen
Karl Dolson	Citizen
Jennifer Dolson	Citizen
Nancy Carol Fryer	Citizen
Joseph P. Straley	University of Kentucky
Richard G. Innes	Bluegrass Institute for Public Policy Solutions
William (Clint) Hardy	Citizen
Nick Brooks, President	Kentucky Science Teachers Association
Donnie Wilkerson	Teacher
Adrienne Gilbert	Citizen
Shannon Buzard	Parent
Aaron (Chad) Erhardt	Minister
David Robinson	Citizen
Maureen Erickson	Parent/Grandparent
James Donaldson	Citizen
Maureen Carman	Citizen
Dena Stewart Gore	Parent
Tim Whalen	Citizen
Will Knapp	Citizen
Martin Cothran	Citizen
Elizabeth Schmitz, Executive Director	Kentucky Environmental Education Council
Herman Cummings	Georgia Resident
Delores Vowels	Citizen
Henry Jackson	Citizen

Scott Blome	Citizen
Janie Blome	Citizen
Ryan Lawson	Citizen
Haley Lawson	Citizen
Stephanie Evitts	Citizen
Misty Pack	Citizen
Shannon Alexander	Citizen
RR [no name given]	Citizen
RP [no name given]	Citizen
John Brice	Citizen
Trivida Embry	Citizen
Marvin Embry	Citizen
Chad Erhardt	Citizen
Ronald Tucker	Citizen
Cindy Tucker	Citizen
Maureen Erickson	Citizen
Phyllis Slaughter	Citizen
Cindy Rausch	Citizen
Sandra Stotsky	Professor
Florence Molnar	Citizen
Becky Schmidt	Citizen
Sondra Cook	Citizen
Amanda Underwood	Kentucky Science Teachers Association
David Helm	Kentucky Science Teachers Association
Sherry Fox	Kentucky Science Teachers Association
Clara Fulkerson	Kentucky Science Teachers Association
Rita Jane Shelton	Kentucky Science Teachers Association
David L. Evans, PhD	National Science Teachers Association
John Walker, PhD	Teacher
Elizabeth Powers	Citizen
Dr. Victoria Carr	Arlitt Child & Family Research & Education Center
Paul Aud	Citizen
Keith L. Hautala	Citizen
Roberta Burns	Educator and parent
Ashley Hoffman	Kentucky Association for Environmental Education
Malicia T. Hitch	Protection and Advocacy Staff Attorney
Joan Perkins	Citizen

3. The following people from the promulgating administrative body attended this public hearing or responded to the written comments:

Name and Title

Kevin C. Brown, General Counsel/Associate Commissioner, Office of Guiding Support Services

Amy Peabody, Assistant General Counsel, Office of Guiding Support Services

David Wickersham, Assistant General Counsel, Office of Guiding Support Services

Tracy Herman, Legislative Liaison, Office of Guiding Support Services

Robin Chandler, Policy Advisor, Office of Next Generation Learners

Sean Elkins, Consultant, Division of Program Standards

Christine Duke, Consultant, Division of Program Standards

Melinda Curless, Consultant, Division of Program Standards

Chad Collins, General Counsel, Kentucky High School Athletic Association

Summary of Comments and Responses

- (1) Subject Matter: Support for the adoption of the Next Generation Science Standards (NGSS)

(a) Comment: Commenters stated that the adoption of the Next Generation Science Standards would be beneficial for Kentucky children.

Commenters stated that Kentucky students deserve the most up-to-date science education, and that an up-to-date science education includes learning about climate change.

Commenters stated that the adoption of the Next Generation Science Standards will help prepare Kentucky students for the challenges and opportunities they will face later in the 21st Century.

Commenters stated that the Kentucky Core Academic Standards for Science reflect the state of modern, mainstream science.

A commenter stated that university science professors expect incoming students to know the climate change standards contained in the Kentucky Core Academic Standards for Science and that students learning under those standards would be well-prepared for careers in fields that require knowledge of science, technology, engineering, and mathematics.

A commenter endorsed the adoption of the standards, stating they are research-based, grounded in inquiry, rich in content, and internationally benchmarked. The commenter expressed confidence in the process by which the standards were developed.

A commenter asked that the standards be implemented as presented, stating that much intellectual capital was expended in their development. The commenter also stated that

the Next Generation Science Standards represent the best pedagogical knowledge for teaching science, and that picking and choosing individual standards would harm their coherence and value.

A commenter strongly encouraged the full adoption of the Next Generation Science Standards.

A commenter stated that the Kentucky section of the American Institute of Professional Geologists unanimously supports implementing the standards as written.

A commenter stated that adoption of the Next Generation Science Standards will be a foundation for improving the quality of science education in Kentucky.

A commenter stated that including evolution and climate change in state standards protects teachers from being bullied into teaching creationism or bad science, and that opposition to science is an attack on liberty.

A commenter praised the progression of topics and the emphasis on evidence promoted by the standards. This commenter asked that the standards be adopted as written, without alterations.

A commenter stated that the standards will be beneficial for students who struggle with disabilities because they will be able to engage with science concepts as they move from abstract paper and pencil concepts into exploration.

A commenter recommended that Kentucky adopt and implement the Next Generation Science Standards as an effective, research-based way to transform science education.

A commenter stated that adoption of the Next Generation Science Standards would ensure that Kentucky students are well prepared to compete with their peers, both nationally and internationally, for educational and career opportunities.

A commenter expressed admiration for the Kentucky Department of Education for taking a leadership role in the development of the standards.

Another commenter expressed a hope that the Next Generation Science Standards will be fully adopted with no omissions or compromise. The commenter stated that the proposed standards will make hands-on learning a greater part of the education process, and moves learning to be more student centered and less rote.

A commenter stated that the Next Generation Science Standards encourage active learning through the use of modeling, investigation, and the application of the student's knowledge.

Those speaking or providing written comments in support of the adoption of the Next Generation Science Standards were: Blaine Ferrell (Kentucky Academy of Science),

Tom Tretter (Kentucky Science Teachers Association), Daniel Phelps (Kentucky Paleontological Society), Trent Garrison (American Institute of Professional Geologists, Kentucky Section), Rick Clewett (Climate Parents), Robert Bevins (Kentuckians for Science Education), David Robinson (Citizen), Joseph Straley (University of Kentucky), Donnie Wilkerson (Citizen), Elizabeth Schmitz (Kentucky Environmental Education Council), Scott Blome (Citizen), Janie Blome (Citizen), Henry Jackson (Citizen), Ryan Lawson (Citizen), Haley Lawson (Citizen), Stephanie Evitts (Citizen), John Brice (Citizen), Sheila Anderson (Climate Parents) [who submitted comments in the form of a petition signed by three thousand eight hundred ninety-four (3,894) individuals], Nick Brooks (Kentucky Science Teachers Association), Amanda Underwood (Kentucky Science Teachers Association), David Helm (Kentucky Science Teachers Association), Sherry Fox (Kentucky Science Teachers Association), Clara Fulkerson (Kentucky Science Teachers Association), Rita Jane Shelton (Kentucky Science Teachers Association), Sondra Cook (Citizen), David L. Evans, PhD (National Science Teachers Association), John Walker, PhD (Teacher), Dr. Victoria Carr (Arlitt Child & Family Research & Education Center), Roberta Burns (Educator and parent), Ashley Hoffman (Kentucky Association for Environmental Education), and Keith L. Hautala (Citizen).

(b) Response: No changes will be made in response to comments in support of the adoption of the Next Generation Science Standards as the Kentucky Core Academic Standards for Science. The agency has determined that, in addition to these commenters, other individuals, organizations, and businesses have publically supported the adoption of the Next Generation Science Standards. Those individuals, organizations, and businesses include: American Chemical Society, American Meteorological Society, American Physical Society, American Society of Plant Biologists, Association of Presidential Awardees in Science Teaching, Association of Public and Land Grant Universities, National Association of Gifted Children, Bruce Alberts (Stanford University / Past President, National Academy of Sciences), Andy Anderson (Michigan State University), Wolfgang Bauer (Michigan State University), Rodolfo Dirzo (Stanford University), James Paul Holloway (University of Michigan), Jonathan Osborne (Stanford University), Helen Quinn (Stanford University), Carl Wieman (Stanford University / Nobel Laureate), Battelle Memorial Institute, Bayer Cooperation, Carolina Biological Supply Company, Chevron, CISCO Systems, Comcast, Corning, Inc., Dell Inc., Dupont, Eaton, Eli Lilly, IBM, and the Microsoft Corporation.

The agency has determined that the comment recommending that Kentucky adopt and implement the Next Generation Science Standards as an effective, research-based way to transform science education was provided by the President of the National Science Teachers Association on behalf of over 55,000 members consisting of science teachers, science supervisors, administrators, scientists, business and industry representatives, and others involved in and committed to science education.

(2) Subject Matter: General opposition to the adoption of the Next Generation Science Standards as the Kentucky Core Academic Standards for Science

(a) Comment: Commenters requested that the agency not adopt the Next Generation Science Standards as the Kentucky Core Academic Standards for science and that the agency not adopt any common core standards.

Those speaking or offering written comments opposing the adoption of the Next Generation Science Standards as the Kentucky Core Academic Standards for Science and the adoption of common core standards were: Sarah Reddick (Citizen), Ann Kidder (Citizen), Brian Jackson (Citizen), Kathy Strauss (Citizen), Lydia Lynne Coates Fuller (Citizen), Naomi Hodges (Citizen), Glenda Grace (Citizen), Virgil Ridings (Citizen), Joel Woltz (Citizen), Donna Hazelwood (Citizen), Samantha Tucker (Citizen), Vickie Hatton (Citizen), Angela Rankins (Citizen), Jeff Whittinghill (Citizen), Joan Tighe (Citizen), Edward Prigge (Citizen), Ronnie Trogden (Citizen), Candace Granstaff (Citizen), Allan Smith (Citizen), Jim Nation (Citizen), Sarah Grayson (Citizen), R. Wesley Pace (Citizen), Joe Armstrong (Citizen), Bridgett Reed (Citizen), Amanda Bifone (Citizen), William Bishop (Citizen), Randall Lamb (Citizen), John Rice (Citizen), Stephen Secchio (Citizen), Brian Slone (Citizen), Pam Yancy (Citizen), Sherian Tingle (Citizen), Mike Alexander (Citizen), Genevieve Apodaca (Citizen), Claudia Hargrove (Citizen), Jacqueline Burchett (Citizen), Colleen Crigler (Citizen), Teddy Williams (Citizen), Teresa Smith (Citizen), Spencer Skaats (Citizen), Angela Armato (Citizen), Craig Newman (Citizen), Jerome Lawson (Citizen), Stephanie Ramsey (Citizen), David Foushee (Citizen), Patrick McCamish (Citizen), Amy Meadors (Citizen), Danny Fletcher (Citizen), Dennis Stafford (Citizen), James Roark (Citizen), Judy Roark (Citizen), Billie Stafford (Citizen), Linda Rose (Citizen), Helen Bloodsworth (Citizen), Naomi Webb (Citizen), Anna Reeder (Citizen), Ella Lonas (Citizen), Becky Schmidt (Citizen), Tammy Skaats (Citizen), Cheryl Sadler (Citizen), Angie Christensen (Citizen), Jay Bond, Sr. (Citizen), Diana Diggles (Citizen), Linda Bryant (Citizen), Charlotte Purcell (Citizen), Regina Eckle (Citizen), Donald F. Inks, Jr. (Citizen), Rita Isham (Citizen), Erin Seaman (Citizen), Jay Dargan (Citizen), Jim McHale (Citizen), Tim Boll (Citizen), Sherry Gaines (Citizen), Brenda Kabler (Citizen), Steve Flinchum (Citizen), William Marvel (Citizen), Gary Rogers (Citizen), Randy Riblet (Citizen), Johnny E. Evans (Citizen), Debra Smith (Citizen), Marvin Oliver (Citizen), Terry Sears (Citizen), John Sparks (Citizen), Eileen Serke (Citizen), Frank Simon (Citizen), Mary McClendon (Citizen), Gary Buckley (Citizen), Beverly Buckey (Citizen), Roberta Dorsey (Citizen), Velma Newsom (Citizen), Steve Rudy (Citizen), Ken Collins (Citizen), JoeAnn Collins (Citizen), Vickie Hatton (Citizen), Elsie R. Hall (Citizen), Esther Whitley (Citizen), Florence Molnar (Citizen), Regina Smith (Citizen), Bobby Alexander (Citizen), Steve Lorimer (Citizen), JoAnn Davis (Citizen), Kimberly Wood (Citizen), Glenda M. Cogan (Citizen), Frank Simon (Citizen), Sharon Almquist (Citizen), Rob Jones (Citizen), James Champ (Citizen), Ralph Hawkins (Citizen), Stephan Schick Sr. (Citizen), Linda Horback (Citizen), Colin Bruner (Citizen), David Bartsch (Citizen), Delores Vowels (Citizen), Kim Houlihan (Citizen), Shirley Mayrand (Citizen), Michelle Truitt, (Citizen), Aaron Erhardt (Citizen), Trivida Embry (Citizen), Marvin Embry (Citizen), Ronald Tucker (Citizen), Cindy Tucker

(Citizen), Maureen Erickson (Citizen), Phyllis Slaughter (Citizen), Nancy Carol Fryer (Citizen), Dr. Don Patton (Arkansas resident), and Paul Aud (Citizen).

(b) Response: No changes have been made in response to comments opposed to the adoption of the Next Generation Science Standards as the Kentucky Core Academic Standards for Science or in opposition to the adoption of common core standards. The Next Generation Science Standards are not a part of the Common Core State Standards initiative. The Next Generation Science Standards were developed through a different process than the Common Core State Standards. The Next Generation Science Standards have been under development for two years and meet the statutory mandates of SB 1 (2009). Kentucky joined 25 states to develop the Next Generation Science Standards through a collaborative process. About 40 Kentuckians, including P-12 science teachers, state science and policy staff, administrators, higher education and faculty, scientists, and engineers were involved in the development process. The standards focus on topics and content, required as a pre-requisite by colleges science courses. The agency has determined that the adoption of the Next Generation Science Standards is necessary and appropriate, to ensure college and career readiness for Kentucky students.

(3) Subject Matter: Removal of evolution from the Kentucky Core Academic Standards for Science

(a) Comment: Commenters objected to the continued inclusion of evolution in the science standards and stated that the teaching of evolution will lead to a variety of negative social consequences, including the negation of religious belief, the marginalization of students with religious beliefs, the promotion of socialism and resulting genocide and murder, drug abuse, suicide, hopelessness, the limitation of personal freedom, and the belief that might makes right.

A commenter expressed concerns that humans are classified with primates because primates have four hands, not two.

A commenter stated that the science curriculum should not include Darwinism.

A commenter stated that asking educators to teach evolution would violate the educators' right to exercise their moral and religious beliefs.

A commenter stated that outsiders are imposing the elitist and rich man's religion of evolution on the families of public school students, taking away the right to worship God.

Commenters stated that if evolution is in the standards, and taught, they will remove their children from the public schools and homeschool their children.

Those speaking or offering written comments seeking the removal of evolution from the Kentucky Core Academic Standards for Science were: Annice Milliner (Citizen), Matt Singleton (Citizen), Dena Stewart-Gore (Citizen), Maureen Erickson (Citizen), James Donaldson (Citizen), Valerie O'Rear (Citizen), Kim Houlihan (Citizen), Delores Vowels

(Citizen), Chad Erhardt (Citizen), James Donaldson (Citizen), Joe Armstrong (Citizen), and Kathrene Lewis (Citizen), RR (Citizen), RP (Citizen), and Ralph Hawkins (Citizen).

(b) Response: No changes have been made in response to comments requesting the removal of evolution from the Kentucky Core Academic Standards for Science. Biological evolution is the fundamental, unifying theory that underlies all the life sciences. It has formed the basis of productive research for over a century. Few scientific theories have had as transformative and widespread impact on their respective fields as has evolution. This is why evolution is universally accepted among professional biology researchers. According to the Association of College and University Biology Educators (ACUBE), knowledge of evolutionary theory is essential for success in every biology course of study. There is no significant ongoing debate within the scientific community regarding the legitimacy of evolution as a scientific idea.

Comments regarding the negative societal impact of teaching evolution appear to be based on personal opinion.

Evolution is a scientific theory, and is not a religion. Nothing in the Next Generation Science Standards restricts the religious freedom of Kentucky families or educators.

The agency notes that the concept of evolution already exists in the current version of the Kentucky Core Academic Standards for Science, and has been assessed since those standards were adopted in 2006. In fact, the Next Generation Science Standards contain a decreased number of standards related to biological evolution, compared to the standards currently in place.

The decision to homeschool a child rather than sending that child to public school is an individual parental choice and is beyond the scope of this regulation.

(4) Subject Matter: Support for the continued inclusion of evolution in the Kentucky Core Academic Standards for Science

(a) Comment: A commenter stated that evolution is thoroughly supported by many decades of scientific research.

A commenter stated that including evolution and climate change at the level of state standards protects teachers from being bullied into teaching creationism or bad science.

A commenter stated that meaningful debate on evolution has ceased and that there are observed examples of evolution.

Commenters stated that evolution and climate change are controversial topics, but the controversy is political, and not scientific.

A commenter stated that learning about evolution in high school would have been beneficial. The commenter stated that a lack of knowledge of evolution was a disadvantage when competing with other students entering the medical field.

Those speaking or offering written comments supporting the continued inclusion of evolution in the Kentucky Core Academic Standards for Science were: Paul Vincelli, Ph.D. (Citizen), Robert Bevins (Citizen), Regina Smith (Citizen), Elizabeth Power (Citizen), Roberta Burns (Educator and parent) and Keith L. Hautala (Citizen).

(b) Response: No changes have been made in response to comments in support of the continued inclusion of evolution in the Kentucky Core Academic Standards for Science. The theory of evolution is included in Kentucky's present Core Academic Standards for Science, and has been assessed since the standards were adopted in 2006. The agency has determined that the theory evolution continues to be universally accepted among professional biology researchers and other scientists.

Biological evolution is the fundamental and unifying theory that underlies all of the life sciences. It has formed the basis of productive research for over a century. Few scientific theories have had as transformative and widespread impact on their respective fields as has evolution. The reasoning that underlies the development of the theory of evolution exemplifies the process of science, which process is fundamental to all scientific disciplines. Students should continue to be given the opportunity to examine the logical process and scientific evidence that led to the development of this foundational scientific idea. Students with a thorough grounding in all areas of science are better equipped to compete for careers and selective college admission. Scientific literacy is essential for success in the twenty-first century, especially in science, technology, engineering, and mathematics-related careers.

(5) Subject Matter: The inclusion of creationism and intelligent design, without supernatural or theological explanations, in the Next Generation Science Standards.

(a) A commenter requested that creationism and intelligent design be included in the standards, but through a secular approach, free from supernatural or theological explanations.

A commenter stated that it is a good idea to discuss intelligent design from both a secular and a religious viewpoint.

Those speaking or offering written comments on the inclusion of creationism and intelligent design, free from supernatural or theological explanations were: William Hardy (Citizen) and Dena Stewart-Gore (Citizen).

(b) Response: No change has been made in response to these comments. The agency has determined that the omission of creationism and intelligent design from the standards was based primarily on overwhelming scientific consensus. The agency has determined that the overwhelming majority of scientists do not consider creationism and intelligent

design as scientific theories. Accordingly, their omission from the Next Generation Science Standards reflects the consensus view among professional scientists and science educators. Even if it were possible to reword the basic ideas of creationism to exclude a theological or supernatural creator, or to discuss intelligent design without discussing the identity of the hypothesized designer (thus avoiding the legal objection), those ideas would still lack meaningful scientific support.

Additionally, courts have repeatedly declared unconstitutional the teaching of creationism and intelligent design on the basis that such teaching violates the Establishment Clause of the First Amendment to the United States Constitution. See, for example, Tammy Kitzmiller, et al. v. Dover Area School District, et al., 400 F. Supp.2d 707 (M.D.Pa. 2005) and Daniel v. Water, 515 F.2d 485 (6th Cir. 1975).

The Next Generation Science Standards do not attempt to explain the origin of life. Creationism and intelligent design attempt to explain the origin of life. Evolution does not conflict with creationism or intelligent design because the ideas do not attempt to explain the same things.

(6) Subject Matter: Additional revision of the Kentucky Core Academic Standards for Science.

(a) Comment: Commenters asked that additional revision be made to the Kentucky Core Academic Standards for Science for the purpose of refuting evolution and climate change.

Commenters requested the addition of: epigenetic factors, the improbability of random mutation as a driving factor in genetic change, the ideas of the Altenberg 16 in opposition to evolution, Flavius Josephus' study of the accuracy of scripture, the observations of Moses, the existence of man-made metal spheres in the Precambrian, canopy theory, dynamic decay theory, the hydro-plate theory, research on the effect of solar flares on the earth's magnetic field, and other ideas not contained in the proposed science standards.

Commenters requested that intelligent design be added to the standards.

A commenter stated that the Next Generation Science Standards do not reflect the most recent research on evolutionary theory.

A commenter stated the adoption of the Next Generation Science Standards would violate KRS 158.6451 because the standards do not provide for instruction in different theories on such topics as climate change and evolution.

A commenter provided a DVD titled *Confronting Evolution*, containing a creation seminar promoting a curriculum critical of evolution, as an example of how the proposed science standards should teach evolution.

Those speaking or offering written comments requesting additional revision to the Kentucky Core Academic Standards for Science were: Todd Belcher (Citizen), Matt

Singleton (Citizen), Adrian Gilbert (Citizen), Sarah Reddick (Citizen), Ann Kidder (Citizen), Brian Jackson (Citizen), Kathy Strauss (Citizen), Lydia Lynne Coates Fuller, (Citizen), Naomi Hodges (Citizen), Glenda Grace (Citizen), Virgil Ridings (Citizen), Joel Woltz (Citizen), Donna Hazelwood (Citizen), Samantha Tucker (Citizen), Vickie Hatton (Citizen), Angela Rankins (Citizen), Jeff Whittinghill (Citizen), Joan Tighe (Citizen), Edward Prigge (Citizen), Ronnie Trogden (Citizen), Candace Granstaff (Citizen), Allan Smith (Citizen), Jim Nation (Citizen), Sarah Grayson (Citizen), R. Wesley Pace (Citizen), Joe Armstrong (Citizen), Bridgett Reed (Citizen), Amanda Bifone (Citizen), William Bishop (Citizen), Randall Lamb (Citizen), John Rice (Citizen), Stephen Secchio (Citizen), Brian Slone (Citizen), Pam Yancy (Citizen), Sherian Tingle (Citizen), Mike Alexander (Citizen), Genevieve Apodaca (Citizen), Claudia Hargrove (Citizen), Jacqueline Burchett (Citizen), Colleen Crigler (Citizen), Teddy Williams (Citizen), Teresa Smith (Citizen), Spencer Skaats (Citizen), Angela Armato (Citizen), Craig Newman (Citizen), Jerome Lawson (Citizen), Stephanie Ramsey (Citizen), David Foushee (Citizen), Patrick McCamish (Citizen), Amy Meadors (Citizen), Danny Fletcher (Citizen), Dennis Stafford (Citizen), James Roark (Citizen), Judy Roark (Citizen), Billie Stafford (Citizen), Linda Rose (Citizen), Helen Bloodsworth (Citizen), Naomi Webb (Citizen), Anna Reeder (Citizen), Ella Lonas (Citizen), Becky Schmidt (Citizen), Tammy Skaats (Citizen), Cheryl Sadler (Citizen), Angie Christensen (Citizen), Jay Bond, Sr. (Citizen), Diana Diggles (Citizen), Linda Bryant (Citizen), Charlotte Purcell (Citizen), Regina Eckle (Citizen), Donald F. Inks, Jr. (Citizen), Rita Isham (Citizen), Erin Seaman (Citizen), Jay Dargan (Citizen), Jim McHale (Citizen), Tim Boll (Citizen), Sherry Gaines (Citizen), Brenda Kabler (Citizen), Steve Flinchum (Citizen), William Marvel (Citizen), Gary Rogers (Citizen), Randy Riblet (Citizen), Johnny E. Evans (Citizen), Debra Smith (Citizen), Marvin Oliver (Citizen), Terry Sears (Citizen), John Sparks (Citizen), Eileen Serke (Citizen), Frank Simon (Citizen), Mary McClendon (Citizen), Gary Buckley (Citizen), Beverly Buckey (Citizen), Roberta Dorsey (Citizen), Velma Newsom (Citizen), Steve Rudy (Citizen), Ken Collins (Citizen), JoeAnn Collins (Citizen), Vickie Hatton (Citizen), Elsie R. Hall (Citizen), Esther Whitley (Citizen), Florence Molnar (Citizen), Regina Smith (Citizen), Bobby Alexander (Citizen), Steve Lorimer (Citizen), JoAnn Davis (Citizen), Kimberly Wood (Citizen), Glenda M. Cogan (Citizen), Sharon Almquist (Citizen), Rob Jones (Citizen), James Champ (Citizen), Ralph Hawkins (Citizen), Stephan Schick Sr. (Citizen), Linda Horback (Citizen), Colin Bruner (Citizen), David Bartsch (Citizen), Shirley Mayrand (Citizen), Michelle Truitt (Citizen), Maureen Carman (Attorney), and Dr. Don Patton (Arkansas resident).

(b) Response: No changes have been made in response to comments requesting the additional revision of the Kentucky Core Academic Standards for Science. The Next Generation Science Standards include only ideas that are widely supported within the scientific and science education communities and represent core disciplinary ideas that have wide utility for students. The agency has determined that many of the ideas proposed for inclusion are not widely recognized. In scientific fields as large as biology and paleontology, there are many thousands of individuals engaging in research. It would be virtually impossible for scientists to agree upon every minute detail of every scientific concept. The fact that a small number of scientists present ideas contrary to the widely accepted scientific consensus does not automatically give their ideas equal weight and

credibility. If those ideas gain wide support within the scientific and scientific education communities, it is more likely that they will be included in future revisions of the Kentucky Core Academic Standards for Science. Only scientific ideas are eligible for inclusion in science standards. A number of the ideas suggested for inclusion (canopy theory, for one example) are not accepted as scientific theories by the scientific community and are, accordingly, not included.

The Next Generation Science Standards do not attempt to explain the origin of life. Creationism and intelligent design attempt to explain the origin of life. Evolution does not conflict with creationism or intelligent design because the ideas do not attempt to explain the same things. Ideas, theories, hypotheses, or beliefs concerning the ultimate origin of life are not included in the Next Generation Science Standards.

The standards represent a ‘floor’ in terms of content students are required to master, not a ‘ceiling’. Every school and district has the freedom to supplement the standards to create curricula appropriate for their students, and to add additional topics as they see fit.

The agency has determined that the proposed standards are consistent with KRS 158.6451, which requires the agency to prepare and disseminate a model curriculum framework, and requires the agency, pursuant to KRS 158.6453, to make revisions to the content standards that shall:

- Focus on critical knowledge, skills, and capacities needed for success in the global economy;

- Result in fewer, but more in-depth standards to facilitate mastery learning;

- Communicate expectations more clearly and concisely to teachers, parents, students, and citizens;

- Be based on evidence-based research;

- Consider international benchmarks; and

- Ensure that the standards are aligned from elementary to high school to postsecondary education so that students can be successful at each education level.

Different theories on such topics as climate change and evolution may be selected, by a local district, as the district exercises its control over curriculum, or may be included in revisions to content standards as those different theories withstand the scientific scrutiny applied to screen the present content of the standards.

While the agency appreciates the submission of the DVD presentation, the instructional presentation it contains is an example of a science curriculum. Since curriculum is a local decision, this submission falls outside the scope of the regulation under consideration.

(7) Subject Matter: Evolution is not settled science. Evolution is theory, not fact.

(a) Comment: Commenters stated that evolution is not settled science.

Commenters stated that evolution is not a scientific idea.

Commenters stated that evolution is only a theory and is not a fact.

Commenters stated that the teaching of evolution misleads students.

Commenters stated that there is not a consensus within the scientific community regarding evolution as the primary mechanism to explain the diversity of organisms.

A commenter stated that the theory of evolution is the result of the logical fallacy of inductive reasoning because history has not been witnessed.

A commenter stated that evolution is not settled science because it cannot be expressed as a formula, such as work.

A commenter stated that the fossil record does not support the idea of evolution and that the fossil record delights creationists and causes headaches for evolutionists.

A commenter objected to the idea of scientific consensus, and referred to scientific consensus as fact by popular vote.

A commenter stated that the authors of the Next Generation Science Standards are either misleading or are underprepared and underinformed.

A commenter stated that the standards are a curriculum that favors the theory of evolution over creation and that evolution is not a fact.

Those speaking or offering written comments that evolution is not settled science, and is not fact, were: Todd Belcher (Citizen), Matt Singleton (Citizen), Dena Steward-Gore (Citizen), Adrian Gilbert (Citizen), Dr. Don Patton (Arkansas resident), Valerie O'Rear (Citizen) Steve Shreeve (Citizen), Tim Whalen (Citizen), Sarah Reddick (Citizen), Ann Kidder (Citizen), Brian Jackson (Citizen), Kathy Strauss (Citizen), Lydia Lynne Coates Fuller, (Citizen), Naomi Hodges (Citizen), Glenda Grace (Citizen), Virgil Ridings (Citizen), Joel Woltz (Citizen), Donna Hazelwood (Citizen), Samantha Tucker (Citizen), Vickie Hatton (Citizen), Angela Rankins (Citizen), Jeff Whittinghill (Citizen), Joan Tighe (Citizen), Edward Prigge (Citizen), Ronnie Trogden (Citizen), Candace Granstaff (Citizen), Allan Smith (Citizen), Jim Nation (Citizen), Sarah Grayson (Citizen), R. Wesley Pace (Citizen), Joe Armstrong (Citizen), Bridgett Reed (Citizen), Amanda Bifone (Citizen), William Bishop (Citizen), Randall Lamb (Citizen), John Rice (Citizen), Stephen Secchio (Citizen), Brian Slone (Citizen), Pam Yancy (Citizen), Sherian Tingle (Citizen), Mike Alexander (Citizen), Genevieve Apodaca (Citizen), Claudia Hargrove (Citizen), Jacqueline Burchett (Citizen), Colleen Crigler (Citizen), Teddy Williams (Citizen), Teresa Smith (Citizen), Spencer Skaats (Citizen), Angela Armato (Citizen), Craig Newman (Citizen), Jerome Lawson (Citizen), Stephanie Ramsey (Citizen), David Foushee (Citizen), Patrick McCamish (Citizen), Amy Meadors (Citizen), Danny Fletcher (Citizen), Dennis Stafford (Citizen), James Roark (Citizen), Judy Roark (Citizen), Billie Stafford (Citizen), Linda Rose (Citizen), Helen Bloodsworth (Citizen), Naomi Webb

(Citizen), Anna Reeder (Citizen), Ella Lonas (Citizen), Becky Schmidt (Citizen), Tammy Skaats (Citizen), Cheryl Sadler (Citizen), Angie Christensen (Citizen), Jay Bond, Sr. (Citizen), Diana Diggles (Citizen), Linda Bryant (Citizen), Charlotte Purcell (Citizen), Regina Eckle (Citizen), Donald F. Inks, Jr. (Citizen), Rita Isham (Citizen), Erin Seaman (Citizen), Jay Dargan (Citizen), Jim McHale (Citizen), Tim Boll (Citizen), Sherry Gaines (Citizen), Brenda Kabler (Citizen), Steve Flinchum (Citizen), William Marvel (Citizen), Gary Rogers (Citizen), Randy Riblet (Citizen), Johnny E. Evans (Citizen), Debra Smith (Citizen), Marvin Oliver (Citizen), Terry Sears (Citizen), John Sparks (Citizen), Eileen Serke (Citizen), Frank Simon (Citizen), Mary McClendon (Citizen), Gary Buckley (Citizen), Beverly Buckey (Citizen), Roberta Dorsey (Citizen), Velma Newsom (Citizen), Steve Rudy (Citizen), Ken Collins (Citizen), JoeAnn Collins (Citizen), Vickie Hatton (Citizen), Elsie R. Hall (Citizen), Esther Whitley (Citizen), Florence Molnar (Citizen), Regina Smith (Citizen), Bobby Alexander (Citizen), Steve Lorimer (Citizen), JoAnn Davis (Citizen), Kimberly (Citizen), Rob Jones (Citizen), James Champ (Citizen), Ralph Hawkins (Citizen), Stephan Schick Sr. (Citizen), Linda Horback (Citizen), Colin Bruner (Citizen), David Bartsch (Citizen), Shirley Mayrand (Citizen), Aaron (Chad) Erhardt (Citizen), Herman Cummings (Georgia resident), Michelle Truitt (Citizen), RR (Citizen), RP (Citizen), Misty Pack (Citizen), Shannon Alexander (Citizen), and Paul Aud (Citizen).

(b) Response: No changes have been made in response to comments that evolution is not settled science or a fact. The agency has determined that, in the scientific and science education communities, a theory is a statement of general ideas that explains many observations of the natural world. In the scientific and science education communities, the word “theory” is a very precise term that identifies a concept that has great utility in explaining phenomena in the natural world. Ideas only rise to the level of scientific theories if they have withstood scrutiny and are exceptionally useful in explaining a wide variety of independent observations. Any scientific theory can be altered or replaced if the theory cannot adequately explain new observations or new scientific evidence.

In the field of science, facts do not become theories. Rather, theories *explain* facts. No theory is immune from revision or replacement in the face of new facts. There is a substantial difference between the everyday and conversational meaning of the word "theory," and the scientific meaning of the word. In everyday conversation, an idea is often labeled a theory for the purpose of painting it as little more than a guess. As explained above, the scientific meaning of the term is much narrower. The Next Generation Science Standards employ the scientific meaning of “theory.” Referring to biological evolution as a theory, for the purpose of contesting it, does not weaken the acceptance of biological evolution within the scientific and science education communities.

There is no significant ongoing debate within the scientific community regarding the legitimacy of evolution as a scientific idea. Inconsistencies and unknown details exist in all areas of scientific research and knowledge. The existence of inconsistencies and unknown factors does not negate the dramatically larger body of evidence supporting the prevailing theories in those areas of research.

The agency has determined that professional scientific bodies and organizations supporting the legitimacy of the concept of biological evolution as a cornerstone of the science of biology include:

Alabama Academy of Science
American Anthropological Association
American Association for the Advancement of Science
American Association of Physical Anthropologists
American Astronomical Society
American Chemical Society
American Geological Institute
American Geophysical Union
American Institute of Biological Sciences
American Physical Society
American Psychological Association
American Society of Biological Chemists
American Society of Parasitologists
American Sociological Association
Association of College and University Biology Educators
Association of Southeastern Biologists
Association for Women Geoscientists
Australian Academy of Science
Biophysical Society
Botanical Society of America
California Academy of Sciences
Committee for the Anthropology of Science, Technology, and Computing
Committee for Scientific Investigation of Claims of the Paranormal
Ecological Society of America
Federation of American Societies for Experimental Biology
Genetics Society of America
Geological Society of America
Society of Australia
Georgia Academy of Science
History of Science Society
Idaho Scientists for Quality Science Education
InterAcademy Panel
Iowa Academy of Science
Kansas Academy of Science
Kentucky Academy of Science
Kentucky Paleontological Society
Louisiana Academy of Sciences
National Academy of Sciences
New Mexico Academy of Science
New Orleans Geological Society
New York Academy of Sciences

North American Benthological Society
North Carolina Academy of Science
Ohio Academy of Science
Ohio Math and Science Coalition
The Paleontological Society
Pennsylvania Academy of Science
Pennsylvania Council of Professional Geologists
Philosophy of Science Association
Research! America
Royal Astronomical Society of Canada - Ottawa Centre
Royal Society
Royal Society of Canada
Royal Society of Canada, Academy of Science
Sigma Xi, Louisiana State University Chapter
Society for Amateur Scientists
Society for Integrative and Comparative Biology
Society for Neuroscience
Society of Physics Students
Society for the Study of Evolution
Society of Systematic Biologists
Society of Vertebrate Paleontology
Society of Vertebrate Paleontology
Southern Anthropological Society
Tallahassee Scientific Society
Tennessee Darwin Coalition
Virginia Academy of Science
West Virginia Academy of Science

Educational organizations supporting the legitimacy of the concept of biological evolution as a cornerstone of the science of biology include:

American Association of Physics Teachers
American Association of University Professors
American Association of University Women
Arkansas Science Teachers Association
Association of College and University Biology Educators
Association of Pennsylvania State College and University Biologists
Auburn University Faculty Senate
Authors of Biology Textbooks
Biological Sciences Curriculum Study
California Science Teachers Association
Empire State Association of Two Year College Biologists
Georgia Citizens' Educational Coalition
Idaho Science Teachers Association
Illinois Community College Faculty Association Delegate Assembly
Inter-University Council of Ohio

Iowa Council of Science Supervisors
Iowa Department of Public Instruction
Maryland Association of Science Teachers
Michigan Science Teachers Association
Michigan State Board of Education
National Association of Biology Teachers
National Council for the Social Studies
National Education Association
National Science Education Leadership Association
National Science Teachers Association
New Mexico Coalition for Excellence in Science and Math Education
New York State Education Department
New York State Science Supervisors Association
North Carolina Science Teachers Association
Oklahoma Science Teachers Association
Oklahoma State University Department of Zoology
Science Museum of Minnesota
Science Teachers Association of New York State
Society for College Science Teachers
Syracuse Parent-Teacher Association
University of Alabama at Huntsville Faculty Senate
University of California Academic Senate
University of New Mexico History Department
University of Oklahoma Department of Zoology
University of Queensland (Australia) Board of the Faculty of Science
University System of Georgia Biology Academic Advisory Committee
Utah Science Teachers Association
Utah State Board of Education
Wisconsin Department of Public Instruction

In light of the wide, and deep, support for the teaching of biological evolution, the agency has determined that biological evolution should remain an element of the Kentucky Core Academic Standards for Science.

The agency reiterates that the standards are not a curriculum. Nothing in the Kentucky Core Academic Standards for Science discusses or requires certain curricula.

(8) Subject Matter: Non-religious objection to the theory of evolution

(a) Comment: A commenter stated there are non-religious objections to evolution, and cited the works of Cambridge biochemist Douglas Axe, Moeller and Newman, epigenetics, the work of the Altenberg 16, University of San Francisco paleontologist Paul Chien, and others. He asked that students be taught alternative scientific explanations to evolution and to reject the proposed standards related to evolution.

Those speaking or offering written comments regarding non-religious objections to the inclusion of the theory of evolution in the Kentucky Core Academic Standards for Science were: Todd Belcher (Citizen).

(b) No changes have been made in response to these comments. The agency has determined that the ideas of evolution, included in the standards, reflect the consensus of the overwhelming majority of scientists. There is no longer scientifically significant debate on the role of evolution in the modern study of biology. This is evidenced by the omission of the suggested ideas from the *Framework for K-12 Science Education*, published by the National Research Council of the National Academy of Science. The *Framework* represents core knowledge in the biological sciences. The exclusion of the suggested theories is evidence that those theories are not components of core biological knowledge, and are peripheral to science education.

The Next Generation Science Standards include only ideas that are widely supported within the scientific and science education communities and represent core disciplinary ideas that have wide utility for students. The agency has determined that many of the ideas proposed for inclusion are not widely recognized. If those ideas gain wide support within the scientific and scientific education communities, it is more likely that they will be included in future revisions of the Kentucky Core Academic Standards for Science.

(9) Subject Matter: Opposition to the teaching of climate change through the Kentucky Core Academic Standards for Science

(a) Comment: A commenter stated that standards overemphasize global warming, to the neglect of other concepts.

A commenter noted the omission of scientific terms such as “hormone” and “kinesis” in the Kentucky Core Academic Standards.

A commenter stated that she opposes teaching climate change as “settled” science because there is ongoing debate, and more scientists are coming out against it.

A commenter stated that carbon dioxide is not the most common greenhouse gas, and suggested that Climategate and the global carbon tax be studied by the agency.

Commenters questioned the emphasis on climate change in the Next Generation Science Standards, based on the frequency with which the word “climate” appears.

A commenter stated that climate change is junk science.

A commenter stated that theories about manmade global warming are imposed upon children from kindergarten.

A commenter stated that a few decades ago, many thought the earth was cooling, illustrating how quickly the assumptions of men can change.

Speaking or offering written comments in opposition to the teaching of climate change were: Annice Milliner (Citizen), William Hardy (Citizen), Robert Hall (Citizen), Valerie O'Rear (Citizen), Aaron (Chad) Erhardt (Citizen), Martin Cothran (Citizen), Greg Cordier (Citizen), and Kimberly Wood (Citizen).

- (b) Response: No changes have been made in response to these comments. The agency has determined that global climate research is increasing in prominence and importance within the scientific and science education communities. Including climate research as part of the Kentucky Core Academic Standards for Science accurately reflects the current state of scientific thought. The Framework for K-12 Science Education includes the study of climate as one of the foundational concepts of the Next Generation Science Standards.

The agency has determined that the basic ideas of climate science, as included in the Next Generation Science Standards, have been described as a scientific consensus by a number of scientific bodies, including:

- American Association for the Advancement of Science
- American Chemical Society
- American Geophysical Union
- American Institute of Biological Sciences
- American Meteorological Society
- American Society of Agronomy
- American Society of Plant Biologists
- American Statistical Association
- Association of Ecosystem Research Centers
- Botanical Society of America
- Crop Science Society of America
- Ecological Society of America
- Natural Science Collections Alliance
- Organization of Biological Field Stations
- Society for Industrial and Applied Mathematics
- Society of Systematic Biologists
- Soil Science Society of America
- University Corporation for Atmospheric Research

The Next Generation Science Standards do not advocate any particular public response, policy change, or civic action regarding climate change. Instead, the standards ask students to consider the evidence for the factors influencing climate change. The standards do not require students to engage in any sort of civic or legal course of action. While such lessons might be included in individual school or district curriculum, such curriculum decisions are under local control. In fact, such curricula could be taught under the current set of standards if individual schools and teachers so desire. The agency has determined that, given its prominence in current scientific research, climate change is possibly already the topic of lessons in science classrooms across the Commonwealth.

Some comments specifically objected to a perceived overemphasis on climate science, based on the number of standards addressing climate change as opposed to other areas of science. The agency suspects that these comments were based upon a simple word search of the science standards, rather than a count of actual performance expectations (standards). Words such as “global”, “warming”, and “climate” may appear in the standards in isolated uses that are not related to the concept of climate change. The agency has also determined that there may be a misperception that every standard addressing weather or climate is related to climate *change*. The study of weather, and the factors influencing weather, has been included in science standards for many years, predating the present study of climate change. The agency has determined that comments asserting a heavy weighting toward climate science, to the exclusion of other disciplines, are not supported by a careful examination of the standards themselves.

Political matters, such as a global carbon tax and Climategate are beyond the scope of this regulation.

(10) Subject Matter: Support for the inclusion of climate change/global warming concepts in the Kentucky Core Academic Standards for Science

(a) Comment: A commenter stated that, while not he is not a climate scientist, he has intensively studied hundreds of peer-reviewed research articles on climate science, has attended three scientific conferences on climate change, and has found that mainstream climate scientists practice the same scientific methods as any community of scientists he has been associated with in 35 years.

A commenter stated that the scientific community is not having any debate about the climate change standards included in the Kentucky Core Academic Standards for Science; that climate change is addressed in respected college texts, and would not be in the absence of consensus in the science community; and that the existence of a human impact on climate change is accepted in mainstream science.

A commenter stated that climate science is a mature science that has existed for more than 150 years, and that scientific data indicates the earth is continuing to warm.

A commenter stated that climate change education is needed because present energy production schemes are irreversibly altering the climate.

A comment stated that Kentucky student deserve the most up-to-date science education, including learning about climate change.

A commenter stated that he was pleased to see the inclusion of standards related to climate and weather because they are needed to help prepare for increasingly severe weather events.

Those speaking or offering written supporting the inclusion of climate change/global warming concepts in the Kentucky Core Academic Standards for Science were: Paul Vincelli, (Ph.D), Rick Clewett (Climate Parents), Robert Bevins (Kentuckians for Science Education), Joseph Straley (University of Kentucky), Donnie Wilkerson (Citizen), and Sheila Anderson (Citizen) who submitted comments in the form of a petition signed by three thousand eight hundred and ninety-four (3,894) individuals.

(b) Response: No changes have been made in response to comments supporting the inclusion of standards relating to climate change and global warming.

(11) Subject Matter: Criticisms of the content and rigor of the Next Generation Science Standards, including criticisms made in the Thomas B. Fordham Foundation Report

(a) Comment: Commenters stated that a report by the Fordham Foundation assigned the Next Generation Science Standards a grade of “C”, and cited the Fordham Foundation report.

A commenter stated that the concerns expressed in the Fordham Foundation Report should delay adoption of the Next Generation Science Standards as the Kentucky Core Academic Standards for Science.

A commenter cited the Fordham Foundation Report, stated that the Next Generation Science Standards blur the true meaning of engineering, and stated that the Standards do not expect much math from students.

A commenter stated that the standards take a process-over-content approach, while SB 1 (2009) requires that the standards be based on evidence-based research.

A commenter stated that there is an imbalance in the presentation and emphasis of subjects such as climate change, as determined by the number of times certain words appear.

A commenter stated that there is not enough emphasis on topics such as Universal Gas Law, current flow in closed electrical circuits, or other physical science content in the high school curriculum. The commenter stated that it would be impossible to derive a high school physics or chemistry course from the standards.

A commenter stated that the proposed standards are not content-driven but are process- and skill-driven. The commenter stated that Senate Bill 1 requires that standards cover academic content.

A commenter stated that the standards are not as rigorous as Kentuckians desire and that a complete rejection of the 2013 standards is needed.

A commenter addressed objections raised by the Fordham Foundation Report and stated that standards and curriculum are misunderstood. The commenter stated that standards

are not detailed and filled with vocabulary words. Standards are the wrong place to look for this detail.

Those speaking or offering written comments supporting concerns raised by the Fordham Foundation Report were: Annice Milliner (Citizen), Adrian Gilbert (Citizen), Valerie O’Rear (Citizen), Richard G. Innes (Bluegrass Institute for Public Policy Solutions), Martin Cothran (Citizen), Cindy Rausch (Citizen), Maureen Carman (Attorney), and Sandra Stotsky (Professor).

Those speaking or offering written comments in opposition to concerns raised by the Fordham Foundation were: Robert Bevins (Kentuckians for Science Education).

(b) Response: No changes have been made in response to criticisms of the content and rigor of the Next Generation Science Standards, including those published by the Thomas B. Fordham Foundation. The agency has determined that, historically, the Fordham grades of science standards have not successfully predicted how well students perform on a common assessment of science proficiency. In a comparison between 2011 8th grade National Assessment of Educational Progress (NAEP) scores and Fordham 2012 science standards grades as reported in their publication *The State of State Science Standards 2012*:

The two **highest scoring states** on the NAEP (North Dakota and Montana) received a grade of **F** from Fordham on their state science standards.

The **lowest scoring state** on the NAEP (District of Columbia) received a grade of **A** from Fordham on their state science standards. Six of the top 10 highest scoring states received a grade of D (Maine, Colorado, and New Hampshire) or F (North Dakota, South Dakota, and Montana). The remaining four received two C's (Vermont and Minnesota), one B (Utah), and a single A (Massachusetts).

The five lowest scoring states on the NAEP received two A's (District of Columbia and California), two D's (Alabama and Hawaii), and one C (Mississippi).

The agency has concluded that the examples above indicate that Fordham’s scores have limited predictive reliability as regards student achievement in science.

The agency notes that the Fordham review grade of “C” for the Next Generation Science Standards represents an improvement over the grade of “D” that Fordham assigned to Kentucky’s present science standards.

The agency has determined that the Fordham report does not accurately evaluate the Next Generation Science Standards. The Fordham report represents the opinion of nine (9) individuals. The review judged the standards in comparison to a set of content expectations created by Fordham and used in their previous reviews of state science standards. These content expectations are very narrowly focused upon content detail.

Such a narrowly-focused set of criteria are not well suited to evaluate content standards that were written to give as much emphasis to the *processes* and *concepts* of science as they give to the *content*.

The absence of specific scientific terms from the standards does not imply their absence from the science curricula of individual schools and districts. Science is not a list of vocabulary words and formulas to be memorized. Facts and formulas can be retrieved instantly in our information-rich society, but they are only valuable when students have an understanding of how to use those facts and formulas to solve meaningful scientific problems.

Standards and curricula are written to different levels of detail. Schools and districts will continue to control curriculum development despite the adoption of revised science standards. Many of the foundational ideas behind concepts detailed in the standards will continue to appear in daily lesson plans at the discretion of the teachers writing and implementing those plans.

It is not the purpose of science standards to define individual course curricula, especially for courses such as chemistry and physics. The standards describe expectations of every student, not just those students wishing to pursue careers in science or Science, Technology, Engineering and Mathematics (STEM) fields. Course requirements for graduation are a matter of local curriculum. Therefore, chemistry and physics are not required for graduation. The current science standards also do not define the curriculum of a complete high school chemistry or physics course. Those curriculum decisions are left to individual schools and districts under Kentucky law.

The agency has learned that the Division of Chemical Education of the American Chemical Society and the American Physical Society endorse the Next Generation Science Standards. These professional groups advocate for the advancement of chemistry and physics in the United States. Their statements of support are below:

The Division of Chemical Education recognizes the achievement that is present in the Next Generation Science Standards, including their basis in research on teaching and learning, their formulation as performance standards, and their basis in the NRC framework and its dimensions of Science and Engineering Practices, Disciplinary Core Ideas, and Cross Cutting Concepts. We endorse the Standards as a document that is broadly applicable as a basis for K-12 science instruction and call upon the Division to develop innovative programming to support the implementation of the Standards.

The American Physical Society Committee on Education endorses the physics content of the Next Generation Science Standards. The Committee recognizes that the Next Generation Science Standards are intended to promote broad science literacy, and urges K-12 education policy-makers in all states to adopt these standards and implement the necessary teacher support to attain them.

These statements of support should be balanced against comments critical of the physical science content of the standards. The agency has determined that the opinions of these professional organizations should be given greater weight based on their preeminence in their respective fields, and the esteem in which practitioners of the sciences hold them.

The agency notes that every topic page of the Next Generation Science Standards is correlated with the Kentucky Core Academic Standards for Mathematics. The experts who reviewed the Next Generation Science Standards have stated that great attention was paid to ensure continuity with the mathematics standards. The Fordham Foundation final report, dated June 13, 2013, acknowledged that Fordham has not yet thoroughly reviewed the new and clearly more extensive Next Generation Science Standards appendix. (Appendix L: Connections to CCSS-Mathematics). As noted above, the absence of specific mathematical concepts from the standards does not imply that those concepts will be absent from curricula developed from those standards. Curricula provide a greater level of content specificity than is included in the standards.

The agency has studied the comment attributing to the Fordham Report criticism that the Next Generation Science Standards blur the true meaning of engineering. This statement was published on Fordham's Edexcellence.net website on February 6, 2013, in response to the January 2013 NGSS public draft. The agency was unable to locate a similar comment in the June 13, 2013 Fordham report that was based on the final released version of the proposed standards. Because there was significant revision of the Next Generation Science Standards between the January 2013 public draft and the final released version, and because this particular criticism appears not to have survived the editing of the Fordham final Report, the agency assumes that the revision of the Next Generation Science Standards satisfied Fordham's concerns, and this comment, regarding the true meaning of engineering.

Kentucky's 2009 Senate Bill 1, codified as KRS 158.6453, mandated revision of all content standards and a number of criteria by which those standards were to be developed or selected. Pursuant to Section 2(b), revisions to the content standards shall:

1. Focus on critical knowledge, skills, and capacities needed for success in the global economy;
2. Result in fewer but more in-depth standards to facilitate mastery learning;
3. Communicate expectations more clearly and concisely to teachers, parents, students, and citizens;
4. Be based on evidence-based research;
5. Consider international benchmarks; and
6. Ensure that the standards are aligned from elementary to high school to postsecondary education so that students can be successful at each education level.

A number of concepts were removed from Next Generation Science Standards to meet the requirements of SB1 (2009), and new standards were required to address critical

knowledge, skills and capacities. The narrowly defined and discrete content requirements used by Fordham in their review conflicts with the requirements of SB1.

A commenter asserted that SB1 (2009) requires a focus on academic content, but this term is absent from the statute. The statute requires that the standards focus on “critical knowledge, skills, and capacities needed for success in the global economy.” The agency has determined that the proposed science standards fully meet the requirements of SB 1 (2009), as enacted.

The agency is unable to identify a mechanism that would quantify the degree of rigor desired by Kentuckians. However, the overwhelming ratio of supporters to detractors offering public comments on the standards suggests that Kentuckians approve of the level of rigor contained in the Next Generation Science Standards.

Inclusion of the concepts in the Next Generation Science Standards was guided by the foundational document from which they were created, the *Framework for K-12 Science Education*. The *Framework* was published by the National Research Council of the National Academy of Science and provides a sound, evidence-based foundation for standards by drawing on current scientific research—including research on the ways students learn science effectively—and identifies the science all K–12 students should know.

The opinion that the Next Generation Science Standards emphasize practices over content is subjective. The agency notes that the developers of the Next Generation Science Standards assert that process and content, as a result of extensive research, are intentionally given equal prominence. The agency has learned that Achieve (Achieve, Inc., an independent, bi-partisan, non-profit education reform organization led by a Board of Directors consisting of governors and business leaders) cited seventy-seven (77) papers and research studies in support of the three dimensional structure (practices, core ideas and cross cutting concepts) of the Next Generation Science Standards, and finds that the standards appropriately attend to process and content.

(12) Subject Matter: Discussion of the scientific process and scientific method

(a) Comment: A commenter stated that the standards do not sufficiently address the scientific process.

A commenter stated that the term “scientific method” does not appear in the standards and that it appears that the Next Generation Science Standards completely overlooked the first, but fundamentally important, introductory chapter of the book on science.

A commenter questioned whether training in scientific reasoning should have less of a role in the proposed science standards than climate science.

Those speaking or offering written comments about the scientific process and the scientific method were: Richard G. Innes (Bluegrass Institute for Public Policy Solutions), Martin Cothran (Citizen), and Valerie O’Rear (Retired Colonel/Parent).

(b) Response: No changes have been made in response to these comments. The agency has determined that, in scientific fields, there is no single definition of the term ‘scientific method’. Accordingly, textbooks that introduce ‘the’ scientific method as a rigidly defined series of rote steps do not accurately reflect the nature of science as it is most frequently practiced.

The scientific method is not universally defined. The scientific method is often presented as exclusively consisting of five steps, usually including (1) defining the problem, (2) forming a hypothesis, (3) making observations, (4) testing the hypothesis, and (5) drawing conclusions. In the practice, and teaching, of science, observation may be the first step. The scientific method is a fluid process that does not necessarily employ each of the five steps listed above, nor dictate the order in which the steps should be applied. The agency recognizes that science professionals and teachers may validly employ other models of scientific practice.

The agency has determined that the proposed standards instill the practices of science (including scientific reasoning) and engineering through performance expectations, rather than separating them into a set of steps to be memorized, tested, and then forgotten. This approach asks students to employ the practices of science every day. One of the three dimensions of the proposed science standards, Science and Engineering Practices, exemplifies the critical attributes of scientific reasoning. These Practices are included in every performance expectation contained in the proposed standards.

The comment that inquired whether training in scientific reasoning should have less of a role in the proposed science standards than climate science poses a question, and not a comment upon the regulation, and no agency response is required.

(13) Subject Matter: The adoption of the Next Generation Science Standards as the Kentucky Core Academic Standards will impact college and career readiness:

(a) Comment: Commenters expressed support for the adoption of the Next Generation Science Standards and stated that the Standards will help improve the college and career readiness of Kentucky students.

A commenter expressed confidence that the adoption of the standards will lead to scientifically literate graduates who are ready for college and careers and will understand how science impacts their lives.

Commenters stated that the new standards will increase the likelihood that students entering college science classes will be better prepared than current graduates who are now entering Kentucky’s universities.

A commenter stated that the Next Generation Science Standards are not about high quality national education standards, but are rather about how to lower the level of academic achievement required for high school diplomas and for admission to public colleges.

Commenters stated that the new standards will result in more Kentucky students being able to enter science, technology, engineering, and mathematics-related career fields.

A commenter stated that the standards will lead to students who are ready to enter the workforce immediately upon graduation.

A commenter stated that the Next Generation Science Standards will help students see the connection between their actions and the world, in tangible ways, and will prepare them for 21st Century jobs.

A commenter stated that the Next Generation Science Standards are supported by strong research and that Kentucky must embrace 21st Century science if we expect our students to compete in an international job market.

Those speaking or offering written comments that the adoption of the Next Generation Science Standards will impact college and career readiness were: Blaine Ferrell (Kentucky Academy of Science), Tom Tretter (Kentucky Science Teachers Association), Daniel Phelps (Kentucky Paleontological Society), Trent Garrison (American Institute of Professional Geologists, Kentucky Section), Rick Clewett (Climate Parents), David Robinson (citizen), Joseph Straley (Professor), Elizabeth Schmidt (Kentucky Environmental Education Council), Elizabeth Power (Citizen), Roberta Burns (Educator and parent), Sandra Stotsky (Professor) and Ashley Hoffman (Kentucky Association for Environmental Education).

(b) Response: No changes have been made in response to comments of support. The agency agrees that the proposed Kentucky Core Academic Standards for science will increase the college and career readiness of Kentucky graduates by giving them a grounding in the skills of scientific literacy needed to enter science, technology, engineering, and mathematics-related preparatory programs and rigorous college coursework.

No changes have been made in response to the comment that the purpose of the Next Generation Science Standards is to lower the academic requirements of high school graduation and college admission. The agency has determined that this comment represents a conclusory statement of opinion and not a critique of the regulation to which a response can be made.

(14) Subject Matter: The adoption of the Next Generation Science Standards as the Kentucky Core Academic Standards for Science will impact the economy in a positive way.

(a) Comment: A commenter stated that Kentucky has a biology-based economy and that students need to understand biology or Kentucky will be left behind economically. The commenter stated that industries will go elsewhere if Kentucky does not adopt the Next Generation Science Standards.

A commenter stated the Next Generation Science Standards should be adopted to help produce the number and quality of scientists needed to sustain this country and its economy.

Commenters stated that the focus on science education exemplified by the Next Generation Science Standards can raise the public's scientific understanding and help areas of the state that are in deep poverty.

A commenter stated that in order to keep pace with the rest of the country and give them [students] the best opportunity for their future, the new science standards should be adopted.

A commenter stated that the approach of the Next Generation Science Standards will have a beneficial impact on the Commonwealth, preparing students for science, technology, engineering, and mathematics fields in industry and manufacturing, boosting the economy, and supplying much-needed jobs to students who are ready to enter the workforce immediately upon graduation.

A commenter stated that adoption of the Next Generation Science Standards will help Kentucky be more economically competitive in the future by attracting high-tech industries.

Those speaking or offering written comments on the positive economic impact of the Next Generation Science Standards were David Robinson (Citizen), Rick Clewett (Citizen), Ryan Lawson (Citizen), Haley Lawson (Citizen), Stephanie Evitts (Citizen), Elizabeth Schmidt (Kentucky Environmental Education Council), and Keith L. Hautala (Citizen).

(b) Response: No changes have been made in response to these supportive comments. The agency agrees that failure to implement the Next Generation Science Standards as the Kentucky Core Academic Standards for Science will place Kentucky at an economic disadvantage with states that adopt and implement the Standards.

The agency notes that in 2007 a Carnegie Foundation commission of distinguished researchers and public and private leaders concluded that the nation's capacity to innovate for economic growth and the ability of American workers to thrive in the modern workforce depend on a broad foundation of math and science learning, as do hopes for preserving a vibrant democracy and the promise of social mobility that lie at

the heart of the American dream. The Carnegie Foundation noted, however, that the U.S. system of science and mathematics education is performing far below par and, if left unattended, will leave millions of young Americans unprepared to succeed in a global economy.

These findings bolster the agency's commitment to the high quality education that Kentucky's students deserve, and the embodiment of that commitment through appropriate education standards.

(15) Subject Matter: Race to the Top funds and Common Core Standards.

(a) Comment: A commenter stated that Kentuckians ought to be embarrassed that their political leaders were so easily bribed by the current federal administration to sell their rights to control local curriculum. The commenter also stated that Secretary of Education Arne Duncan used the Race to the Top funds to get states to adopt common core standards because of the "hodgepodge" of state standards.

Those speaking or providing written comments regarding Race to the Top and common core standards were: Annice Milliner (Citizen)

b) Response: No changes have been made in response to these comments. Kentucky did not adopt new English/language arts and mathematics standards to compete for Race to the Top funds, but instead due to the mandates of SB 1 (2009). Kentucky had already adopted standards for English/language arts and mathematics before the Race to the Top Competition started. SB 1 (2009) required the revision of all content area standards, but did not include a budget allocation for the mandated work. SB 1 (2009) required the agency to consider standards that had been adopted by national content advisory groups and professional education consortia. SB 1 (2009) also required dissemination and training on the standards for all teachers, administrators, and higher education faculty. Kentucky voluntarily submitted an application to support the implementation of the standards, not for development and adoption, as was the case in some other states that competed for Race to the Top funds.

A goal of the state-led Common Core Initiative is to establish rigorous standards that are consistent across states and that are aligned to college-and-career readiness goals. The purpose of standardization is to avoid a "hodgepodge" of standards. Students moving from state to state would experience inconsistencies in standards. This variance in standards also does not support students' ability to compete nationally and globally.

(16) Subject Matter: Opposition to the use of the Common Core State Standards, adopted as Kentucky Core Academic Standards for English/language arts and mathematics.

(a) Comment: Commenters stated there have been numerous articles and experts talking about the Common Core Standards.

Commenters stated that the Common Core Standards are not good for our students.

Commenters stated that the Common Core Standards are a way of dumbing down Kentucky's students and asked that no Common Core Standards be used in Kentucky Schools.

A commenter stated that the Common Core Standards are not rigorous, and lack a research base, international comparisons, and credible authors.

A commenter stated that the Kentucky Core Academic Standards for English/language arts and mathematics were not field-tested and were not endorsed by two of the twenty-nine members of the validation committee.

A commenter stated that the content in the Common Core Standards was too complex. The commenter stated that his young child has Asperger Syndrome, and when asked what he was studying, the child reported that he was study protagonists and thesis statements.

A commenter stated that the Common Core Standards do not allow for innovation by students, and used the China as an example of a country with common standards but that lacks innovation among students.

Commenters stated that the cost of implementation of the Common Core is unsustainable.

A commenter stated that the Common Core was created by the big business elite, including Bill and Melinda Gates.

A commenter stated that the Common Core Standards were a fascist method, used by the government to control students.

A commenter stated that the social studies standards do not include the important term "republic," even though the United States is a republic.

Those speaking or submitting written comments of opposition to the Common Core State Standards, adopted as Kentucky Core Academic Standards for English/language arts and mathematics, were: Sarah Reddick (Citizen), Ann Kidder (Citizen), Brian Jackson (Citizen), Kathy Strauss (Citizen), Lydia Lynne Coates Fuller, (Citizen), Naomi Hodges (Citizen), Glenda Grace (Citizen), Virgil Ridings (Citizen), Joel Woltz (Citizen), Donna Hazelwood (Citizen), Samantha Tucker (Citizen), Vickie Hatton (Citizen), Angela Rankins (Citizen), Jeff Whittinghill (Citizen), Joan Tighe (Citizen), Edward Prigge (Citizen), Ronnie Trogden (Citizen), Candace Granstaff (Citizen), Allan Smith (Citizen), Jim Nation (Citizen), Sarah Grayson (Citizen), R. Wesley Pace (Citizen), Joe Armstrong (Citizen), Bridgett Reed (Citizen), Amanda Bifone (Citizen), William Bishop (Citizen), Randall Lamb (Citizen), John Rice (Citizen), Stephen Secchio (Citizen), Brian Slone (Citizen), Pam Yancy (Citizen), Sherian Tingle (Citizen), Mike Alexander (Citizen), Genevieve Apodaca (Citizen), Claudia Hargrove (Citizen), Jacqueline Burchett (Citizen), Colleen Crigler (Citizen), Teddy Williams (Citizen), Teresa Smith (Citizen), Spencer

Skaats (Citizen), Angela Armato (Citizen), Craig Newman (Citizen), Jerome Lawson (Citizen), Stephanie Ramsey (Citizen), David Foushee (Citizen), Patrick McCamish (Citizen), Amy Meadors (Citizen), Danny Fletcher (Citizen), Dennis Stafford (Citizen), James Roark (Citizen), Judy Roark (Citizen), Billie Stafford (Citizen), Linda Rose (Citizen), Helen Bloodsworth (Citizen), Naomi Webb (Citizen), Anna Reeder (Citizen), Ella Lonas (Citizen), Becky Schmidt (Citizen), Tammy Skaats (Citizen), Cheryl Sadler (Citizen), Angie Christensen (Citizen), Jay Bond, Sr. (Citizen), Diana Diggles (Citizen), Linda Bryant (Citizen), Charlotte Purcell (Citizen), Regina Eckle (Citizen), Donald F. Inks, Jr. (Citizen), Rita Isham (Citizen), Erin Seaman (Citizen), Jay Dargan (Citizen), Jim McHale (Citizen), Tim Boll (Citizen), Sherry Gaines (Citizen), Brenda Kabler (Citizen), Steve Flinchum (Citizen), William Marvel (Citizen), Gary Rogers (Citizen), Randy Riblet (Citizen), Johnny E. Evans (Citizen), Debra Smith (Citizen), Marvin Oliver (Citizen), Terry Sears (Citizen), John Sparks (Citizen), Eileen Serke (Citizen), Frank Simon (Citizen), Mary McClendon (Citizen), Gary Buckley (Citizen), Beverly Buckey (Citizen), Roberta Dorsey (Citizen), Velma Newsom (Citizen), Steve Rudy (Citizen), Ken Collins (Citizen), JoeAnn Collins (Citizen), Vickie Hatton (Citizen), Elsie R. Hall (Citizen), Esther Whitley (Citizen), Florence Molnar (Citizen), Regina Smith (Citizen), Bobby Alexander (Citizen), Steve Lorimer (Citizen), JoAnn Davis (Citizen), Kimberly Wood (Citizen), Glenda M. Cogan (Citizen), Frank Simon (Citizen), Sharon Almquist (Citizen), Rob Jones (Citizen), James Champ (Citizen), Ralph Hawkins (Citizen), Stephan Schick Sr. (Citizen), Linda Horback (Citizen), Colin Bruner (Citizen), David Bartsch (Citizen), Shirley Mayrand (Citizen), Michelle Truitt,(Citizen), Karl and Jennifer Dolson (Citizens), Maureen Carman (Citizen), Valerie O'Rear (Retired Colonel and mother), Steve Shreeve (Parent), Shannon Buzard (Parent), Matt Singleton (Citizen), Sandra Stotsky (Professor), Elsie Hall (Citizen), and Glenda Cogan (Citizen).

(b) Response: No changes have been made in response to these comments. The Kentucky Board of Education reaffirmed its support of the Kentucky Core Academic Standards for English/language arts and mathematics at its April 2013 meeting.

The agency has determined that the federal government played no role in the development of the Common Core State Standards and does not govern the Common Core State Standards initiative. The Common Core State Standards are not a curriculum. They are a clear set of expectations for the knowledge and skills will help students succeed. Nothing in the Kentucky Core Academic Standards discusses or requires curriculum. In Kentucky, the state determines academic standards, or the goals for what each child should know and be able to do by the end of each grade level. Curriculum is set at the local level. Local school districts determine the best curriculum to help the teachers in their schools meet these academic standards. It remains up to each local school district, not the state or federal government, to select curriculum.

The agency notes that states do not field-test standards. Standards are goals and cannot be field-tested. The agency has been unable to locate scholarly research on the viability of, or mechanism for, field testing educational standards.

The agency has determined that the twenty-five member validation committee referenced in a comment was composed of those leading the field of standards development. The members of the validation committee were selected by six governors and chief state school officers, based on nominations. All selected members had demonstrated experience in national and international standards development, or had a reputation of expertise in English/language arts, mathematics, or a related field such as special education, English language learners, assessments, or curriculum development. The validation committee's charge was to validate the process used to develop the standards and assess the evidence-base for the standards. Twenty-three of the twenty-five members validated the development and evidentiary basis of the standards. The agency has determined that the ninety-two percent (92%) agreement rate among the members of the validation committee is sufficient to grant weight to the conclusions of the committee.

The agency notes that the National Governors Association and the Council of Chief State School Officers accepted applications, from across the nation, of content experts to serve on the standards drafting team. While no Kentuckians were selected to serve on the drafting team for the standards, during the drafting process Kentucky teachers, administrators, higher education officials, education partners, the public, and the staffs of the three participating agencies (Council on Postsecondary Education, Education Professional Standards Board, the Kentucky Department of Education) had several opportunities to provide feedback on drafts of the standards. Subsequent drafts reflected the feedback provided by Kentuckians. Several versions of the standards were publicized for teacher and public feedback. Kentucky teachers were very positive about the standards and expressed that their collective voices had been heard.

The agency has determined that the Common Core Standards, adopted in Kentucky as the Kentucky Core Academic Standards for English/language arts and mathematics, are considerably more rigorous than Kentucky's previous standards. An independent study by the Thomas B. Fordham Institute gives the Kentucky Core Academic Standards considerably better grades in content, rigor, clarity, and specificity than previous standards that it called "among the worst in the country." Kentucky's colleges and universities and the business community have advised the agency that students who graduate from high school with mastery of these standards will be prepared for the rigors of postsecondary education and the workforce. These standards were developed to be comparable with those of any other state in the nation and with the standards of any other country in the world.

Comments regarding the rigor of the standards were inconsistent. While some commenters stated that the standards are dumbing down students, others indicated concern that the standards are too complex. Given the wide range of opinions, the agency is unable to reconcile these opposing comments and chooses to rely upon the expertise of the content specialists involved in the development of the content standards.

Innovation may be a part of the classroom experience for every student, irrespective of the standards adopted at the state level. Curriculum decisions and teacher attitudes and behaviors have far more impact on innovation than state standards. Since curriculum

decisions are made at the local, not state, level, the agency has determined that the proposed standards will not have a negative impact on student innovation. Recent Districts of Innovation legislation supports local districts in providing innovation opportunities for their students, as well.

The agency notes that the Common Core Standards are now in their third year of implementation. While early results have shown lower test scores in the elementary grades, as the material being taught and tested has become more rigorous, the college readiness of high school graduates entering postsecondary education in Kentucky has increased dramatically.

The first year the Kentucky Core Academic Standards were implemented in Kentucky schools, the percentage of students prepared to take credit-bearing college courses increased more than six percent, as measured on the ACT college entrance exam. In *Education Week's* 2012 "Quality Counts" report on key education indicators, policy efforts and outcomes, Kentucky ranked 10th in the nation—moving up from 34th place in 2010.

The current social studies standards have not been revised since 2006, and are not part of the Common Core Standards or the Next Generation Science Standards, both adopted as Kentucky Core Academic Standards. The current social studies standards are being amended at this time. "Republic" is specifically mentioned in the standards at the 6th grade level.

(17) Subject Matter: Sharing personal student information:

(a) Comment: A commenter stated a concern about the sharing of a child's personal information through the Individual Learning Plan (ILP). The commenter stated that the ILP is used to plan for course offerings, and contains personal information about a child's academic progress that should not be shared. The commenter has indicated these concerns to the child's school. The commenter expressed concern about the credits required of students, including electives connected to the ILP. The commenter also expressed concern about the protection of the student's health information because HIPPA does not allow access to that information. The commenter stated that schools are not medical institutions, but that schools need medical information when a student registers.

A commenter stated that he was against using a P-20 data system to conduct "surveillance" on students.

Those speaking or submitting written comments on sharing personal student information were: Shannon Buzard (Parent), Steve Shreeve (Parent), Maureen Carman (Attorney), and Kim Houlihan (Parent).

(b) Response: No changes have been made in response to these comments. The agency has determined that the Next Generation Science Standards, to be adopted as the

Kentucky Core Academic Standards for Science, do not address the collection of personal information on students, but confine themselves to content standards.

No new data collection is required as part of the standards initiative and standards are not tied to data collection at the state or local level. Neither the agency nor local school districts have collected data, for example, on religious affiliation. Neither the agency nor local school districts have the technology to collect biometric data on students. Student data are highly protected, and agency efforts around student data systems fully comply with the law by adopting data privacy and security protections that meet the highest industry standards, exceed federal (Family Educational Rights and Privacy Act or FERPA) requirements, and are designed to ensure that student data are used only for agreed-upon education purposes and not further disclosed. In no case would student data be sold. The data is owned by school districts, and the agency protects data in compliance with federal and state laws.

Personal information about an individual student (including identifying information, assessment results, interests, and abilities) in the Kentucky Individual Learning Plan (ILP) is only visible viewed by the student, the parent(s), the student’s advisor, the ILP coordinator at the school, and the ILP coordinator at the district level. No individual student data is reported publicly for the ILP. The “Invite Others Option” of the ILP allows a student to invite colleges, scholarship opportunity providers, or potential employers to view selected portions of the ILP for a limited amount of time. However, parents may choose to disable this option for their student.

Safety and confidentiality are very important to the agency, which will continue to protect all student information.

(18) Subject Matter: The development and adoption process for the Kentucky Core Academic Standards for Science

(a) Comment: Commenters referred specifically to the development and adoption process for the Next Generation Science Standards, adopted as the Kentucky Core Academic Standards for Science, stated that they had confidence in the process used to develop the standards, and thought that the adoption process was strong.

A commenter stated that the adoption process allowed the standards to be well-vetted by those knowledgeable in content, and recommended that the Next Generation Science Standards be adopted, as the Kentucky Core Academic Standards for Science, in their entirety.

A commenter supported the introduction of science concepts in early grade levels, and stated that the standards should be adopted and implemented as written.

One commenter stated that Kentucky should invite input on the standards from Kentucky post-secondary institutions.

A commenter stated that development and adoption of all academic standards needs to be done slowly, and standards that have been adopted need to be revisited.

A commenter stated that the adoption of the Kentucky Core Academic Standards for Science was rushed and the standards were not available long enough for independent review.

A commenter stated that the Next Generation Science Standards were not created through the process outlined in Senate Bill 1 (2009) and did not involve Kentucky educators and parent in any meaningful way because the proposed standards were developed at the national level.

Those speaking or offering written comments on the development and adoption process were: Blaine Ferrell (Kentucky Academy of Science), Tom Tretter (Kentucky Science Teachers Association), Daniel Phelps (Kentucky Paleontological Society), James Donaldson (Citizen), Maureen Carman (Citizen), Valerie O’Rear (Citizen), and Richard Innes (Bluegrass Institute for Public Policy Solutions), Martin Cothran (Citizen), Cindy Rausch (Citizen), Sandra Stotsky (Professor), Nick Brooks (Kentucky Science Teachers Association), Amanda Underwood (Kentucky Science Teachers Association), David Helm (Kentucky Science Teachers Association), Sherry Fox (Kentucky Science Teachers Association), Clara Fulkerson (Kentucky Science Teachers Association), and Rita Jane Shelton (Kentucky Science Teachers Association).

(b) Response: No changes have been made in response to these comments. The Common Core Standards, adopted as the Kentucky Core Academic Standards for English/language arts and mathematics, went through a rigorous drafting and review process.

The agency notes that the National Governors Association and the Council of Chief State School Officers accepted applications, from across the nation, of content experts to serve on the standards drafting team. While no Kentuckians were selected to serve on the drafting team for the standards, during the drafting process Kentucky teachers, administrators, higher education officials, education partners, the public, and the staffs of the three participating agencies (Council on Postsecondary Education, Education Professional Standards Board, the Kentucky Department of Education) had several opportunities to provide feedback on standards drafts. Subsequent drafts reflected the feedback provided by Kentuckians. Several versions of the standards were publicized for teacher and public feedback. Kentucky teachers were very positive about the standards and expressed that their collective voices had been heard.

The agency has determined that the Common Core Standards, adopted in Kentucky as the Kentucky Core Academic Standards for English/language arts and mathematics, are considerably more rigorous than Kentucky’s previous standards. An independent study by the Thomas B. Fordham Institute gives the Kentucky Core Academic Standards considerably better grades in content, rigor, clarity, and specificity than previous standards which it called “among the worst in the country.” Kentucky’s colleges and universities and the business community have advised the agency that students who

graduate from high school with mastery of these standards will be prepared for the rigors of postsecondary education and the workforce. These standards were developed to be comparable with those of any other state in the nation and with the standards of any other country in the world.

The National Research Council (NRC), the staff arm of the National Academy of Sciences, began the drafting of the Next Generation Science Standards by developing the *Framework for K–12 Science Education*. The *Framework* was a critical first step because it is grounded in the most current research on science and science learning and identified the science all K–12 students should know. To undertake this effort, the NRC convened a committee of 18 individuals nationally and internationally known in their respective fields. The committee was composed of practicing scientists, including two Nobel laureates, cognitive scientists, science education researchers, and science education standards and policy experts. In addition, the NRC used four design teams to develop the *Framework*. These design teams, in physical science, life science, earth/space science, and engineering, developed the framework for their respective disciplinary area. A public draft was released in July of 2010. The NRC reviewed comments and considered all feedback prior to releasing the final *Framework* on July 19, 2011.

In a process managed by Achieve, states led the development of K–12 science standards, rich in content and practice, arranged in a coherent manner across disciplines and grades to provide all students an internationally-benchmarked science education. The Next Generation Science Standards are based on the *Framework* and will prepare students for college and careers. The Next Generation Science Standards were developed collaboratively with states and other stakeholders in science, science education, higher education and industry. Additional review and guidance was provided by advisory committees composed of nationally-recognized leaders in science and science education as well as business and industry. As part of the development process, the standards underwent multiple reviews, including two public drafts, allowing all who have a stake in science education an opportunity to inform the development of the standards. The standards underwent significant revision based upon the feedback received. According to Achieve, Kentucky residents responded to the first public draft at the highest percentage rate of any state, and were in the top 15% of states in responding to the second public release.

Kentucky was one of the 26 states that partnered in this collaborative state-led drafting process. About 40 Kentuckians, including P-12 science teachers and (including teachers specifically representing the Kentucky Education Association and Kentucky Science Teachers Association), state science and policy staff, higher education faculty, scientists and engineers were involved in multiple reviews of draft documents over the course of the standards development process.

The agency has determined that standards were developed slowly and thoughtfully, with input from stakeholders, and that the development and adoption process has been transparent and thorough.

(19) Subject Matter: Role of state and local district in standards and curriculum decisions

(a) Comment: A commenter stated that Senate Bill One did not authorize educational standards. The same commenter stated that Section 2 of the Kentucky Constitution requires the legislature to vote upon standards, and that Federal Law Section 1905 forbids federal control of curriculum.

A commenter indicated that he contacted his local school about curriculum so that he could see how the Kentucky Core Academic Standards for English/language arts and mathematics were being taught.

Commenters stated that vocabulary should play an important role in a student's instruction and that they were surprised to not see certain vocabulary words in the standards.

A commenter expressed concern about the absence of famous scientists and the history of science from the Next Generation Science Standards.

Commenters stated that parents should have a voice in the curriculum that is taught in their schools and that curriculum had led to the decision to homeschool their children.

A commenter stated that Kentucky law (KRS 156.438) provides a statutory right to challenge curriculum errors.

A commenter stated that, if the new curriculum is adopted, parents should pull their children out of public school.

A commenter stated that, based upon the commenter's review of the minutes of the March 22, 1999 Education and Assessment and Accountability Review Subcommittee, and the indication in those minutes that an agency employee stated that if core content was adopted in regulation form, it would be a violation of law for a teacher not to teach in the classroom, a legal concept known as "Fair Notice" probably means that subjects omitted from the Next Generation Science Standards cannot be tested in any Kentucky high school assessments.

Those speaking or providing written comments regarding the role of the state and local school districts in standards and curriculum decisions were: Steve Shreeve (Parent), Sharron Buzard (Parent), Kim Houlihan (Parent), Aaron (Chad) Erhardt (Citizen), Adrien Gilbert (Citizen), Maureen Carman (Citizen), Richard G. Innes (Bluegrass Institute for Public Policy Solutions), and Martin Cothran (Citizen).

(b) Response: No change has been made in response to these comments. SB 1 (2009) amended KRS 158.6453. Section (2) (a) directed the Kentucky Department of Education, within thirty (30) days of March 25, 2009, to plan and implement a comprehensive

process for revising the academic content standards in science. Section (2) (b) compels the Kentucky Department of Education to revise content standards to:

- Focus on critical knowledge, skills, and capacities needed for success in the global economy;
- Result in fewer but more in-depth standards to facilitate mastery learning;
- Communicate expectations more clearly and concisely to teachers, parents, students, and citizens;
- Be based on evidence-based research;
- Consider international benchmarks; and
- Ensure that the standards are aligned from elementary to high school to postsecondary education so that students can be successful at each education level.

Because SB 1 (2009) both authorizes and expressly compels the revision of science content standards, the agency has determined that, contrary to comment, the proposed regulation fully complies with the letter and intent of the authorizing statute.

Section Two of the Kentucky Constitution states as follows: *Absolute and arbitrary power over the lives, liberty and property of freemen exists nowhere in a republic, not even in the largest majority.* In promulgating this administrative regulation, the agency has complied with the directives of the legislative branch of government as memorialized in KRS 158.6453. The agency's compliance with statutory mandate does not constitute the exercise of absolute or arbitrary power as contemplated by Section Two of the Kentucky Constitution. The commenter may, through other means, challenge the constitutional validity of KRS 158.6453, the enabling statute, upon which the agency has relied in promulgating this regulation.

The agency has determined that the comment regarding a prohibition against federal control of curriculum regards 20 USC § 6575, which states: *Nothing in this title shall be construed to authorize an officer or employee of the Federal Government to mandate, direct, or control a State, local educational agency, or school's specific instructional content, academic achievement standards and assessments, curriculum, or program of instruction.*

The standards are not a curriculum. The standards are a clear set of expectations for what knowledge and skills will help students succeed. Nothing in the Kentucky Core Academic Standards discusses or requires certain curriculum. In Kentucky, the state sets academic standards, or the goals for what each child should know and be able to do by the end of each grade level. Curriculum is set at the local level. This division between goals and curriculum remains in place under these standards. Local school districts determine the best curriculum to help the teachers in their schools meet these academic standards. Decisions about curriculum at the school level are made by the School Based Decision Making (SBDM) Council. KRS 160.345 gives the SBDM council control of the curriculum of the school and the council must be composed of three (3) teachers, two (2) parents, and one administrator. The control of curriculum rests with the council.

Regarding the process of correcting claims of factual errors in curriculum, KRS 156.438 directs the Kentucky Board of Education to promulgate administrative regulations to establish procedures for reviewing and resolving claims of factual errors found in textbooks after adoption by the State Textbook Commission. This 2011 statute provides an opportunity for an individual to file notice of what is believed to be a factual error, or factual errors, in a textbook that has been adopted by the Kentucky Textbook Commission. The proposed regulation does not involve adopted textbooks, and the procedure cited by the commenter does not apply to the proposed regulation.

The agency has carefully considered the comment regarding “fair notice” and relating to assessment, which is outside the scope of this regulation. 704 KAR 3:303 relates entirely to academic standards and not to assessment. The commenter cited the minutes of the March 22, 1999 Education and Assessment and Accountability Review Subcommittee as binding legal precedent that controls the Next Generation Science Standards and the Kentucky Core Academic Standards for Science. The agency does not agree. While KRS 61.835 provides that the minutes of action taken at every meeting of a public agency, such as the Education and Assessment and Accountability Review Subcommittee, set forth an accurate record of votes and actions at such meetings, the agency is unaware of any authority for the proposition that such minutes set forth an accurate record of responses given in answer to questions posed by representatives. In other words, the minutes do not pretend to serve as an official transcript of all statements made during subcommittee meetings. Regardless, the commenter suggested that a statement made by an employee of the agency, regarding regulation in existence in 1999, binds present action by the agency.

Legal authority on “fair notice” is normally applied in the context of criminal prosecutions. The Due Process provisions of the Fifth Amendment to the United States Constitution require that citizens be afforded fair notice of precisely what conduct is prohibited. See, for example, U.S. v. Blaszak, 349 F.3d 881 (6th Cir. 2003.) The comment suggests a novel application of constitutional due process protections.

In any event, 704 KAR 3:303 has been amended repeatedly in past fourteen years, and the agency is obligated to honor the directives imposed upon it by the legislature as the legislature has also amended the statutes from which the agency’s regulatory authority is drawn. The agency is compelled to adhere to present law and does so in promulgating this regulation. While the 1999 legislative record has historic value, it does not constrain the agency’s obligations under present law.

(20) Subject Matter: Religious neutrality of the Next Generation Science Standards.

(a) A commenter stated that the standards promote evolution as faith rather than the fact of creationism.

A commenter stated the standards employ the rule of methodological naturalism. The commenter asserted that it is the goal of the Framework that children develop a

materialistic/atheistic religious worldview and that the Framework usurps the religious rights of parents, students and taxpayers.

A commenter stated that atheists dominate the field of science and proselytize for atheism as a religion using public funds. The commenter stated that atheism is a religion of a denial of reality, teaching that there is no other entity greater than self.

A commenter stated that the standards are not religiously neutral but that they promote the religious viewpoint of human secularism. The commenter cited the case of McCowan and Maryland for the proposition that there can be both theistic and atheistic religions.

Those speaking or offering written comments on the religious neutrality of the Next Generation Science Standards were: Adrian Gilbert (Citizen), Valerie O’Rear (Citizen), Robert P. Lattimer, Ph.D (Citizens for Objective Public Education), and Herman Cummings (Georgia resident).

(b) Response: No changes have been made in response to comments regarding the religious neutrality of the Next Generation Science Standards. Evolution is long established as a scientific theory and not a religious doctrine. The wide acceptance of the idea of evolution is the result of the consideration of physical and observational evidence. The acceptance of a set of religious beliefs is based largely on faith. There is no conflict between holding faith-based religious beliefs and also accepting the evidence supporting biological evolution. This is evidenced by the fact that practitioners of many different religious faiths are also biologists who study and apply the ideas of evolution in their everyday professional practice.

Case law establishes that evolution is not a religion and that teaching evolution does not violate the Establishment Clause. Epperson v. Arkansas, 393 U.S. 97 (1968). In McGowan v. Maryland, 366 U.S. 420 (1961), the United States Supreme Court held that laws with religious origins are not unconstitutional if they have secular purpose. Subsequent United States Supreme Court jurisprudence (Epperson, supra, Edwards v. Aguillard, 482 U.S. 578 (1987)) invalidated laws that, respectively, prohibited the teaching of evolution and required that creation science be taught in public schools. As noted in Edwards, the Establishment Clause forbids the enactment of any law “respecting an establishment of religion.” Id. at 582. A three-pronged test determines whether legislation comports with the Establishment Clause. First, the legislature must have adopted the law with a secular purpose. Second, the statute's principal or primary effect must be one that neither advances nor inhibits religion. Third, the statute must not result in an excessive entanglement of government with religion. Id. at 583. State action violates the Establishment Clause if it fails to satisfy any of these prongs. Id. The

comment that the Next Generation Science Standards present a constitutionally impermissible human secularism represents a conclusion of law, rather than a comment upon the content of the standards, and no change has been made in response.

(21) Subject Matter: Impact of the Next Generation Science Standards on the SAT

(a) Comment: A commenter asked how the standards being considered impact the SAT

Those speaking or providing written comments on the impact of the SAT were: Susan Buzard (Citizen).

(b) Response: No changes have been made in response to these comments. Science is not a component of the Scholastic Achievement Test. The Scholastic Achievement Test is a product of the College Board. The inherent nature of the proposed science standards, with their focus on science and engineering practices aligned to literacy practices, should result in increased performance on any test used to predict college success.

(22) Subject Matter: Impact of standards revision on students with disabilities

(a) Comment: A commenter stated that parents of children with disabilities who have trouble with science and math will object to the standards because the standards will marginalize these students.

A commenter stated that the standards will benefit students who struggle with disabilities because they will be able to engage with science as it moves from abstract paper and pencil concepts into exploration.

Those speaking or providing written comments regarding the impact of standards revision on students with disabilities were: Dena Stewart-Gore (citizen), Steve Shreeve (citizen), and Elizabeth Schmitz (Kentucky Environmental Education Council).

(b) Response: No changes have been made in response to these comments. Standards exist for all students without regard to disabilities. It is the responsibility of all teachers of students with disabilities to provide appropriate modifications and accommodations based on the child's specific disability and the child's Individual Education Plan.

The agency agrees that the Next Generation Science Standards will benefit all students, regardless of their disability status. Appendix D of the Next Generation Science Standards contains case studies illustrating how the standards can be effectively implemented with diverse students, including those with disabilities.

(23) Subject Matter: General Comments Related to Assessment

(a) Comments: A commenter said that the people writing the assessments are communists.

Commenters posed questions regarding assessment under the Next Generation Science Standards.

Those speaking or offering written comments were: Richard G Innes (Bluegrass Institute for Public Policy Solutions), Elsie Hall (Citizen), Maureen Carman (Attorney), and Cindy Rausch (Citizen).

(b) Response: No changes have been made in response to these comments. The agency has not investigated the political beliefs of the drafters of assessment tools and so cannot respond to the factual allegation regarding communism. The proposed regulation relates entirely to academic standards, and not to assessment, so no response to this comment is required.

(24) Subject Matter: General Regulation Changes

(a) Comment: Commenters requested four (4) changes to the document incorporated into this regulation (by reference) to ensure alignment with recent changes to 704 KAR 3:305.

Speaking or offering written comments requesting changes to the terms contained in the regulation were: Malicia T. Hitch (Protection and Advocacy).

(b) Response: No changes have been made in response to these comments. The agency agrees that these comments are well taken and the changes to the document incorporated by reference should be made, although it is most efficient to change the document incorporated by reference after all standards have been revised, as mandated by SB 1 (2009), rather than making such changes piecemeal, upon the revision of each set of standards.

Summary of Statement of Consideration
and Action Taken by Promulgating Administrative Body

The agency has received significant comment related on 704 KAR 3:303, Required Academic Standards. Comments may be broadly categorized as: 1) general support for the science standards, 2) statements related to the continued inclusion of evolution, 3) statements related to the inclusion of climate change, 4) college and career readiness and economic impact, and 5) the lack of clarity regarding the roles of standards versus curriculum in education and implications of local control in curriculum decisions.

The agency received overwhelming support for the proposed science standards. A petition with 3700 names was submitted in support of the standards. Statements of support were

received from organizations such as the National Science Teachers Association, the Kentucky Science Teachers Association, the Kentucky Academy of Sciences, the Council of State Science Supervisors, the Kentucky Environmental Education Council, the Kentucky Section of the American Institute of Professional Geologists, and the Kentucky Association for Environmental Education. Supportive comments were also received from individual citizens. Common reasons cited in support of the standards included: positive economic impacts, improved college and career readiness, improved scientific literacy, and the need to foster the skills required to compete in the 21st Century.

The agency also received statements of support related to the inclusion of particular science topics such as climate change and evolution, stating that meaningful scientific debate on the validity of evolution and climate science has ceased. Proponents of the continued inclusion of evolution pointed to the overwhelming acceptance of evolution in the biological science community. Proponents of the inclusion of climate change education contend that Kentucky students deserve the most up to date science education, which includes climate change.

The agency also received comments in opposition. Over one hundred substantially identical emails were received stating an opposition to the continued inclusion of evolution in the proposed standards, characterizing evolution as a theory and not a fact. These commenters asked that intelligent design be added to the standards. Other commenters questioned the scientific validity of evolution. The agency also received several comments specific to the inclusion of climate change in the proposed standards, including concerns that climate change science was overemphasized to the neglect of other science concepts or that climate change is not a settled issue in the scientific community.

Some commenters cited a Thomas B. Fordham Institute report as a basis for opposing the adoption of the proposed science standards, claiming insufficient rigor for high school science courses. Some commenters expressed concern that the proposed standards will exclude many students with disabilities due to the standards' complexity. Conversely, other commenters expressed confidence that the standards will lead to scientifically literate graduates that will be better prepared than current graduates who are beginning post - secondary experiences and will contribute meaningfully to Kentucky's economy as members of a better prepared workforce.

Some comments reflected a lack of familiarity with the distinction between curriculum and standards, and the role of local district control of curriculum. Commenters suggested the inclusion of specific scientific topics that were not in the proposed standards. Several comments were not within the scope of this regulation.

The agency received comments in opposition to the Common Core standards. Those standards were adopted by the Kentucky Board of Education in 2010 and are not the focus of this regulation revision. The agency received comments on these standards because they are included in the document incorporated by reference in this regulation. Commenters in opposition to the Common Core claimed the Common Core standards are not rigorous, were developed by the federal government, have not been field tested, are not evidence-based, will be excessively costly to implement and were not validated by the entire validation

committee. Some commenters said the Common Core allow personal information to be collected on students.

The agency, having given thoughtful consideration to all comments submitted by the public, has made no changes to the proposed regulation.