The purpose of this letter is to invite you to participate in a research study “Conceptions of Scale in Science” designed to investigate conceptions of scale at different sizes. Science covers a vast amount of ideas and topics, but there are some concepts that can be used to make sense of a wide array of scientific ideas; one of those powerful concepts is scale. Scientists who use microscopes to experiment with very small objects use small scale and astronomers who study stars and planets very far away think about very large scale. Notions of scale are becoming increasingly important, and to improve the way that science is taught in schools, more information is needed about what people know about scale. Middle and high school participants in the UNC-CH MAZE Days are being invited to participate in this study, which will take place during your visit to UNC-CH.

We would like you to participate in this study. Participation involves completing a 30 minute oral assessment, sorting cards with Braille (or large print) names of objects on them into various stacks based on given criteria, and participating in a short (15 minute) interview at the end of the card sorting activity. With this information from you and other students, we hope to learn how you think about the vastly different sizes of things in this universe, from smaller than an atom to bigger than the galaxy. Participation is entirely voluntary and a decision whether or not to participate will in no way impact your grade or standing in school. Parent permission is required for students to participate, but you can decide for yourself whether or not to participate even if your parent gives permission. There should be no risks to you from this research. You are free to withdraw from the study at any time. If you decide to participate, you may withdraw from the study at any time without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study before data collection is completed your data will be returned to you or destroyed at your request.

All information gathered during this study will be used only for this research study and only the researchers will have access to the data. No identifying names will be used during any of the data reporting. The information gained from this research can help teachers and researchers understand how to better teach science by focusing on important ideas that link all of science together.

At the conclusion of the study, a summary of the results will be made available to interested participants. Should you have any questions or desire further information, please call Gail Jones at (919) 515-4053. There are two copies of this consent letter. Please sign both copies, save one copy for your files, and return one to me. Thank you in advance for your cooperation and support.

Sincerely,

Gail Jones, Professor, Science Education

Note: If you have questions at any time about the study or the procedures, you may contact the researcher, Dr. Gail Jones, at NCSU, Box 7801, Raleigh, NC 27695-7801, or 515-4053. If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Dr. Matthew Zingraff, Chair of the NCSU IRB for the Use of Human Subjects in Research Committee, Box 7514, NCSU Campus (919/513-1834) or Mr. Matthew Roming, Assistant Vice Chancellor, Research Administration, Box 7514, NCSU Campus (919/513-2148).
Please indicate whether or not you wish to participate in the project “Conceptions of Scale in Science” by checking a statement below, signing your name, and returning the signed copy of this 2-page letter to your teacher or to the MAZE Day organizers. Please also return the signed copy of the 2-page parent permission letter at the same time as this letter. Both the student and the parent must return signed permission forms before a student can participate in this project.

Please check one of the following:

___ I DO NOT want to participate in this research project.

_____ I DO want to participate in this research. I have read and understand the above information. I have received a copy of this form. I agree to participate in this study with the understanding that I may withdraw at any time.

__________________________________________  ______________________________
Signature                                      Date

__________________________________________
Name (printed)
Dear Parent,

The purpose of this letter is to invite your child to participate in a research study “Conceptions of Scale in Science” designed to investigate conceptions of scale at different sizes. Science covers a vast amount of ideas and topics, but there are some concepts that can be used to make sense of a wide array of scientific ideas; one of those powerful concepts is scale. Scientists who use microscopes to experiment with very small objects use small scale and astronomers who study stars and planets very far away think about very large scale. Notions of scale are becoming increasingly important, and to improve the way that science is taught in schools, more information is needed about what people know about scale. Middle and high school participants in the UNC-CH MAZE Days are being invited to participate in this study, which will take place during your child’s visit to UNC-CH.

We would like your child to participate in this study. Participation involves completing a 30 minute oral assessment, sorting Braille cards with names of objects on them into various stacks based on given criteria, and participating in a short (15 minute) interview at the end of the card sorting activity. With this information from your child and other students, we hope to learn how students think about the vastly different sizes of things in this universe, from smaller than an atom to bigger than the galaxy. Participation is entirely voluntary and a decision whether or not to participate will in no way impact your child’s grade or standing in school. Parent permission is required for students to participate, but your child can decide for him/herself whether or not to participate even if a parent gives permission. Your child is free to withdraw from the study at any time. There should be no risks to your child from this research.

All information gathered during this study will be used only for this research study and only the researchers will have access to the data. No identifying names will be used during any of the data reporting. The information gained from this research can help teachers and researchers understand how to better teach science by focusing on important ideas that link all of science together.

At the conclusion of the study, a summary of the results will be made available to interested participants. Should you have any questions or desire further information, please call Gail Jones at (919) 515-4053. There are two copies of this consent letter. Please sign both copies, save one copy for your files, and return one to me. Thank you in advance for your cooperation and support.

Sincerely,

Gail Jones, Professor, Science Education

Note: If you have questions at any time about the study or the procedures, you may contact the researcher, Dr. Gail Jones, at NCSU, Box 7801, Raleigh, NC 27695-7801, or 515-4053. If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Dr. Matthew Zingraff, Chair of the NCSU IRB for the Use of Human Subjects in Research Committee, Box 7514, NCSU Campus (919/513-1834) or Mr. Matthew Ronning, Assistant Vice Chancellor, Research Administration, Box 7514, NCSU Campus (919/513-2148)
Please indicate whether or not you wish for your child to participate in the project “Conceptions of Scale in Science” by checking a statement below, signing your name, and returning the signed copy of this 2-page letter to your child’s teacher or the MAZE Days organizers by having your child return both this signed copy and the copy signed by your child. To make sure your child understands the nature of this project you may wish to read the letter aloud to him/her before s/he decides whether or not to sign the student permission form agreeing to participate. Both the student and the parent must return signed permission forms before a student can participate in this project.

Please check one:

___ I DO want my child to participate in this research project. I have read and understand the above information. I have received a copy of this form. I agree to participate in this study with the understanding that I may withdraw at any time.

___ I DO NOT want my child to participate in this research project.

__________________________________________________________
Student’s name (printed)

__________________________________________________________
Student’s School

______________________________________________  ________________
Parent Signature  Date