



# Early Development & Learning Lab Newsletter

Autumn, 2014

## Sleep Study Update

By Amanda Prokasky

Greetings! This fall has brought the students back to campus, (mostly) cooler weather, and a lot of data collection. The next few months are shaping up to be our busiest months yet, with many of our toddlers finishing up their 42 month visits, and many more beginning the study. We have broken the 100 child threshold for children recruited to participate in our study, and we will have finished testing 50 children by the end of this year. We are also working on some preliminary data analysis from the data we've collected thus far- you can read more about our findings in this newsletter.

As always, we want to thank our participants and their families for allowing us to collect a mountain of data as we examine sleep in toddler children. In addition, we would like to thank all child care centers and secondary care providers for allowing us to recruit in their centers and providing supplementary data on our participants. Please continue to spread the word about our study to your friends, family, and anyone who may be interested in participating in the toddler sleep study!

*Amanda is the EDLL project coordinator and a graduate student in Child, Youth, and Family Studies.*

## Preliminary Findings: Sleep and Temperament

By Dr. Kathleen Rudasill & Dr. Victoria Molfese

We have been interested in understanding the connection between parents' reports of children's sleep times and sleep problems, and how those reports related to the estimates of children's sleep times that we get from the actigraphs children wear as part of our study. Another question we wanted to answer was whether children's sleep is related to their temperament as reported by their parents. We have now examined these questions with information from the 2 1/2 year olds in our study and we found that parents' estimates of toddlers' sleep time

were slightly longer than estimates from the actigraphs. We also found that toddlers who have more parent reported sleep problems are getting less sleep; the actigraph estimates show later bedtimes and less total night time sleep for these toddlers. More active and less easily soothed toddlers also had less total sleep time, and more fearful toddlers were more variable in when they fell asleep at night. The information we are gathering from our parents' reports in the sleep diaries and in the sleep questionnaires is very helpful to us for understanding what characteristics of toddler sleep are problematic for parents and how toddler temperament is reflected in sleep habits.

*Dr. Rudasill is Associate Professor of Educational Psychology.*

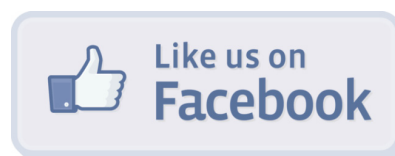
*Dr. Molfese is Chancellor's Professor of Child, Youth, and Family Studies.*

## What I Like About Working in the Lab

By Jack Gallagher

I've been working in the lab for a little over a year now, and have taken part in every aspect of data collection. Out of all the different procedures and visits we conduct in the Toddler Sleep Study, bedtime routine observations are undoubtedly my most enjoyable thing to do with the lab. One of the reasons I find them so fascinating is that no matter how many times we observe children's bedtime routines, there is almost always something new and different to see each time we go to a participant's house. I really enjoy seeing all of the different parenting styles. Although each home visit and bedtime routine is different, it's nice to consistently see positive parent-child interactions, which are relatively common across families.

*Jack Gallagher is an undergraduate Biochemistry major.*



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# Early Development and Learning Lab

## Actigraphy Explained

By Jayden Nord

Children in the Toddler Sleep Study wear an actigraph for two weeks, and their parents keep a diary of their sleep. These pieces of information are instrumental to our understanding of the development of toddlers' sleep! Here is a bit more detail about how we use these pieces of information.

Actigraphs record both frequency and intensity of movement, and measure the activity of the wearer better than pedometers. The actigraph data are uploaded to a computer, and the sleep diary entries are recorded into a program, marking nap and bed times. We then compare the actigraph-reported inactivity to parent-report sleep time, and use this as a base for our analyses.

A computer algorithm then analyzes the data, telling us several things about your child's sleep: how much of a nap or bed time is spent sleeping (sleep percentage); how much of that time is spent awake (wake percentage); and the number of wake times and duration of each wake episode. If precise nap and bed times are given, the actigraphs also tell us how much time it takes for your child to fall asleep after being put to bed; this is called sleep latency.

But if we get this information for each night, why do we have your child wear the actigraph for two weeks? Because one night's worth of data may not represent your child's sleep on average. Multiple days of information are logged by the actigraph. After marking the times in the data, those days are averaged together to give a more accurate, general picture of your child's sleep. This is why it is important for a child to consistently wear the actigraphs and for parents to complete the diaries each morning and night. By doing so, you're helping us collect accurate data that best represents your child's sleep habits. These data can then be related to the tests at the lab visits and the forms you complete at home to give us a broad picture of how sleep relates to child development.

*Jayden is a Graduate Student in Educational Psychology.*

## The Early Development and Learning Lab needs more participants!!

We are currently recruiting toddlers younger than 2½ years for our sleep study. We are also seeking toddlers between 2½ and 3½ for an EEG study. EEG is a safe and painless way of measuring naturally occurring brain waves. If you know anyone else who may be interested, please pass along our contact information. Thank you!

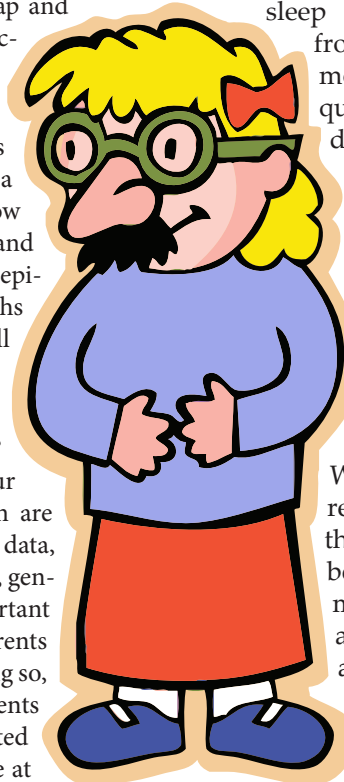
**Early Development and Learning Lab**  
www.cehs.unl.edu/edl | 402.472.8982

## Preliminary Findings:

### Actigraph Data and Parent-Reported Sleep

By Scott Frohn

Sleep is important for cognitive and behavioral development in young children. Children who get less sleep at night tend to exhibit more behavior problems and lower cognitive performance (Lavigne et al., 1999; Touchette et al., 2007). The Toddler Sleep Study uses multiple sources of information to measure toddlers' sleep, including several parent-report questionnaires, sleep diaries, and actigraphy (data from a wearable device that tracks movement). However, sleep questionnaires are developed for different purposes (e.g., to gauge sleep habits or identify severe sleep problems), and therefore may relate to actigraph data differently. Preliminary analysis of Toddler Sleep Study data indicates that although some questionnaire information relates to actigraphy, they mostly reflect different perspectives on toddler sleep.



We have found that two measures relating to actigraph data are scales that assess a child's resistance to bedtime. For children that have more difficulty initiating sleep, our actigraph data suggests that they are awake more and sleep less at night than children who are easier to put to bed. Although this is a preliminary finding, it does seem to make sense: kids who are harder

to put to bed might not be "easy" sleepers.

Another preliminary finding is that children who take longer to fall asleep (according to actigraph and sleep diary data) also wake up more at night (according to parents). However, one surprising finding is that parent-ratings of child night-waking are not related to the actigraph measures of night waking (i.e., wake minutes, number of wake episodes, or duration of wake episodes). This could be because some parents simply perceive their child as waking often, or that some toddlers wake up at night but do not alert their parents when awake. As we collect more data, we will hopefully be able to understand these findings more clearly.

*Scott is a Ph.D. student in Educational Psychology.*



## Student Spotlight: Caitlin Masterson

Hello! My name is Caitlin Masterson. I am excited to be involved with research in the Early Development and Learning Lab. I came to the University of Nebraska to get my PhD in neuroscience and behavior. Last May, I graduated from Missouri State University in Springfield, Missouri with my masters in experimental psychology. While I was there, I served as the lab and research coordinator for the Brain and Behavior Research Lab. I am very interested in electrophysiological measures of the brain and am excited to expand my research knowledge and abilities by working with children. One day, I hope to research the effects of concussion in youth sports and find out how development plays a role in recovery. After I earn my PhD, my goal is to get a job at a university where I can mentor students and continue my research. When I'm not in school, I enjoy all types of watersports, hiking, biking, and going to movies. I also love dogs and hope to adopt a retired racing greyhound one day.

*Nicole is a graduate student in Psychology.*

## Kids Events in Lincoln - Fall 2014

### By Hannah Malcolm

#### Toddler Time

A librarian reads aloud to children aged 18 to 36 months along with their parents or caregivers (Free)

October 23rd from 10 a.m. – 10:20 a.m.  
Gere Branch Library (2400 S. 56th St.)

#### Halloween Spooktacular

Family Halloween Laser Spooktacular sing-along (\$5 for kids and \$6 for adults)

October 24th at 7pm, 8pm, and 9pm  
Morrill Hall Museum (645 N 14th St)

#### Boo at the Zoo

Boo at the Zoo is Lincoln's largest trick-or-treat event. There are over 35 trick-or-treat booths to get candy, coupons, and more. All of the money raised during Boo at the Zoo directly supports the Zoo. (\$9 per person, free for Zoo members)

October 26-30, from 5:30 pm – 8:00 pm  
Lincoln Children's Zoo (1222 S 27th St)

#### IndiExplore

Books and animals! The Capital Humane Society is bringing several animals to read to, and there will be hands-on activities, books, and experts on children's topics. (Free)

November 14th from 10 a.m. – 11 a.m.  
Indigo Bridge (701 P Street, Suite 102)

#### Winterfest

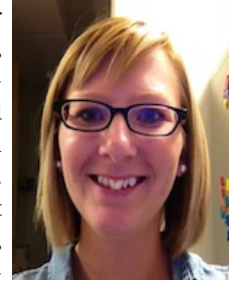
Event with winter themed art-making activities for all ages. Cookies and cider will be provided as well.

December 8th from 1 pm – 4 pm  
Lux Center for the Arts (2601 N. 48th St. Lincoln, NE 68504)

*Hannah is an undergraduate Nutrition and Health Sciences Student*

## Student Spotlight: Nicole Adams

Hello! I'm Nicole Adams. I am a first year Master's student studying Cognition, Learning and Development in Educational Psychology. I recently graduated from UNL with a Bachelor of Arts in Psychology and a minor in Education. My research interests are temperament and how it relates to child development, teacher-child, and parent-child relationships. My research interest stems from my experiences working with preschool aged children as a lead teacher, and elementary aged children as a para educator and intern with Lincoln Public Schools. What excites me the most about working in the Early Development and Learning Lab is learning the research process first hand!



I am from Nebraska and have lived in Lincoln for ten years. I am married and my husband and I have a child in kindergarten. So in addition to watching children develop in educational settings, I also get to watch how my own child develops and how his temperament affects his relationships with teachers, and my husband and me.

*Nicole is a graduate student in Educational Psychology.*

### The EDLL Staff

**Dr. Victoria Molfese** – Co-Director

**Dr. Kathleen Rudasill** – Co-Director

**Amanda Prokasky** – Project Coordinator

**Scott Frohn** – Graduate Research Assistant

**Molly Holmes** – Graduate Research Assistant

**Carly Champagne** – Graduate Research Assistant

**Jayden Nord** – Graduate Research Assistant

**Caitlin Masterson** – Graduate Research Assistant

**Nicole Adams** – Graduate Research Assistant

**Garth Hamilton** - Graduate Research Assistant

**Hannah Malcolm** – Undergraduate Research Assistant

**Jeanna Song** – Undergraduate Research Assistant

**Jack Gallagher** – Undergraduate Research Assistant

**Rachel Schroeter** – Undergraduate Research Assistant

**Shannon Guy** – Undergraduate Research Assistant

**Kaitlyn Johnson** – Undergraduate Research Assistant

**Taariq Allen** – Undergraduate Research Assistant

The Early Development and Learning Lab is always looking for participants for ongoing research projects. In addition to the toddler sleep study, there may be additional projects for which we will need participants. If you are interested in continuing your participation and involvement with the EDLL, feel free to give us a call at 402-472-8982. We look forward to hearing from you!

