

THE DEVELOPMENTAL SCIENCE LABORATORY

(Former name: The Behavioral Observation Laboratory)

Rooms 236 (Observation Room) and 238 (Operation Room)
The Cecil J. Picard Center for Child Development and Lifelong Learning
200 E Devalcourt St, Lafayette, LA 70506



About Us

The Developmental Science Laboratory (DSL) consists of a team of interested faculty and students from the Psychology Department at the University of Louisiana at Lafayette, who share similar passion for examining developmental processes across the life span. Researchers in this lab take an interdisciplinary approach in order to examine the complexity of adjusted and maladjusted developmental processes appropriately.

Faculty

Hung-Chu Lin, Ph.D., Developmental Psychology

Collaborators

1. The Cecil J. Picard Center for Child Development and Lifelong Learning
2. Better Options Initiative, Inc.
3. The Early Childhood Support and Services, the Louisiana Department of Health and Hospitals, Lafayette (until termination of the program)

Lab Equipment and Setup

A technology that enables micro-analytic examination of human behavior is to the science of psychology what microscopes are to the science of biology: Critical and needed equipment that allows students to see the discipline in action. The DSL is a facility that is in line with the University's Strategic Plan to provide stimulating academic environments. The facility involves many students in cutting edge research and provides digitized behavioral samples for classes that greatly enhance the students' educational experiences. It is a system that allows us to observe and record human behavior and then to analyze those behaviors at various levels, from macroscopic overviews to micro-behavioral analysis on a frame-by-frame basis. Such technology is

typically only available at major research institutions.

The Instructional and Scientific Equipments Grants (awarded to Dr. Hung-Chu Lin in 2007 and 2008) have assisted in the successful establishment of a laboratory that allows behavioral analysis at the microanalytic level. Structured or semi-structured experimental procedures are conducted in the Observation Room, equipped with 3 video cameras and a highly sensitive audio recorder mounted on the walls inputting audio and video information into the Monitor and two desk top computers in the Operation Room (across the hallway from the observation room). The state-of-the-art coding software Observer XT with Video Module permits recording and coding of behaviors at a frame-by-frame basis. In addition, the SPSS statistical software along with the JMP program provide a powerful set of univariate and multivariate analytical tools to perform both basic and advanced statistical analysis.

The DSL provides the opportunity to experience this level of sophisticated research (for example, being able analyze the dynamics of group interaction or integrating physiological indices with behavior in real time). The system is currently being used for coding many different research projects and can be accessed by student on a daily basis. The nature and methodology of this technology brings enriching learning experiences to students that far surpass those that students gain from other types of research (e.g., questionnaires). We have found that this technology and research paradigm fosters and motivates students' learning and growth in ways which cannot always be achieved in a traditional classroom setting. In addition, the software and facility allows for the recording and evaluation of psychotherapy sessions, as a component of training psychotherapists, which will benefit any member of the student body needing supportive psychotherapy.

Students who have used the facility at the DSL often comment that they did not understand how exciting psychological research could be until they had the chance to see and work with this technology at the DSL. Working with this technology and learning the associated skills enables our students to become more competitive candidates for graduate school. In the past, research using the system has been presented at prestigious national and international conferences (Canada, 2013; Germany, 2014; Spain, 2015), including work that was presented by students. This exposure to research activities of psychologists from different parts of the world inspires our students to venture out for innovative thinking and study.

Specific Equipment Description

Media Recorder

The Media Recorder from Noldus Information Technology Inc. enables synchronous video recordings from up to four different video and audio sources. Compatible with The Observer® XT, FaceReader™, and a broad range of cameras, it is the ideal recording tool. Media Recorder enables us to combine different videos in one study. It is at the core of the lab and offers precision and flexibility in video recording and synchronization. Media Recorder can also be used as a stand-alone tool to make recordings and analyze those later, particularly if we are importing recordings from

off-site projects. This increases the flexibility of the system, and increases the number of students who can utilize the program in projects and research.

H264 Video Digitizer Board for Media Recorder

This hardware component in the CPU allows the data from the video cameras to be translated from analog to digital data for use in the Observer XT 12.5 program. It includes Euresys H264 Video Capture Card that receives the analog data from the cameras and microphones. Without this component, the video data from the cameras and the audio data from the microphones cannot be accessed with a computer. This component enables also split screen viewing of both cameras at the same time, enabling better understanding of micro-behaviors. This is the component that enables faculty to pull video clips of behavior to include in power point presentations for their classes.

The Observer XT 14.0 : Media Module

The Observer® XT is the professional and user-friendly event logging software for the collection, analysis, and presentation of observational data. The Observer XT supports the entire workflow of a research project: from setting up the experiment, design of a coding scheme, and data gathering, to data analysis and presentation. This is the program that students use to create coding schemes, to code the video and audio data, to do elementary data processing, and to create portions of presentations for conferences. This program is so user friendly that a novice can be trained to use it productively in just a few hours, and so powerful that it is considered the gold standard for observational research in the field of psychology. There is no other program that is comparable.

Dell Precision Desktop Computer

This CPU is specifically formatted for the Observer XT 12.5 and comes with an advanced graphics card (Nvidia Quadro K620 2GB) and the advanced video card (H.264 Professional Mpeg Encoder Board/Framegrabber) to enable the functions of the Observer XT 12.5. It comes with the software pre-installed and tested prior to delivery.



Experiments conducted in the Observation Room examining preschoolers' social emotional and cognitive development.

Left: Parent-child dyad during normal interaction session.

Right: Student researcher testing a child's perspective taking.



Left: Student researcher conducting false belief test examining preschoolers' understanding of theory of mind.

Below: Student researchers observing experiment in session from the operation room.



Below: Student researchers coding behaviors using the Observer XT software program.

Two of the cameras from the Observation Room send images to the split-screen monitor. The Observer XT coding software can play two images synced in time, allowing analysis of dyadic interaction on a frame-by-frame basis.



Research Projects

Currently Undertaken

1. *The relation between development of empathy and understanding of theory of mind*
2. *Preschoolers' responses to social partners' distress: The effects of familiarity with social partners*
3. *The temporal relations between acoustic features of infant cry sounds, cry perception, and emotional responding*
4. *Enrichment and stress in parents of children with autism spectrum disorder*
5. *Behavioral responses to disruption in conversational flow*
6. *The relations between dispositional empathy, perceived parenting, and internal working models in inmates and college students*
7. *The long-term physical and mental sequelae of adverse childhood experiences*
8. *The relation between adverse childhood experiences and sexual self-esteem*
9. *Empathy and judgment towards bystander intervention in an emergency situation*

Lab Activities

Students (both graduate and undergraduate) involve in developing research initiatives, designing experiment, recruiting participants, scheduling experiments, conducting research procedures, organizing data, data analysis, and manuscript preparation. As a committee member serving on the Institutional Review Board (IRB) at the UL Lafayette, it is extremely important to me that students working in the lab take appropriate considerations and actions to ensure the rights and benefits of both child and adult participants. Each of them is required to understand and be familiar with the procedures involved to obtain the IRB approval for a research project. Further, each of them is required to go through the self-paced online Protection of Human Research Subjects training offered by the National Institutes of Health.

The DSL faculty does not recruit students based on their GPA's or academic performance.

Faculty embraces students who demonstrate interest in research and show strong motivation and commitment to the learning process. I have witnessed several students who came in with low GPA's, yet after exposing themselves to lab experiences at the DSL for some time, transformed into students with exceptional task efficiency and motivation to learn. Reassuringly, their academic performance, in turn, showed a tremendous improvement.

Lab members meet regularly on Friday afternoons. We usually begin with reflection and discussion on various aspects of projects currently undertaken at the lab. We brainstorm methods to solve problems we face in certain projects and refine experimental procedures to ensure rigorous control for variables under study. A session of literature review would often follow, critically critiquing the information as relevant to our current projects. We include different psychological perspectives to advance and widen our knowledge base to examine complex developmental processes. Further, we relate the discussion to our daily life experiences and to our future directions in career development and personal growth.

The meetings are usually followed by experimental sessions. Students get the first-hand experiences to interact with participants and conduct experiment, closely following the carefully designed protocols. Some of the students have been chosen to conduct laborious and strenuous behavioral coding based on their schedules and career goals. These students spend averagely 10 hours per week working on the coding and data analysis in the lab. It is evident (as shown in part in the attached lab pictures) that they are not only learning diligently at the lab, but also having a great deal of fun.

During the literature discussions and experimental sessions, faculty attends closely to each student's skills in task efficiency, information processing, and communicative style and effectiveness. Base on the understanding of each student's learning styles, faculty tailors their approach to provide guidance and support helping individual students develop their research competence and career plans.



We support each other and celebrate life events in the lab.



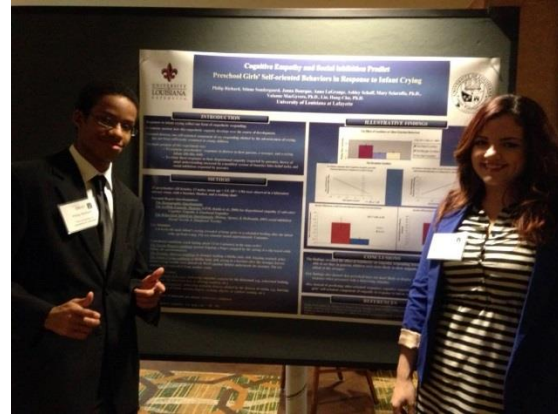
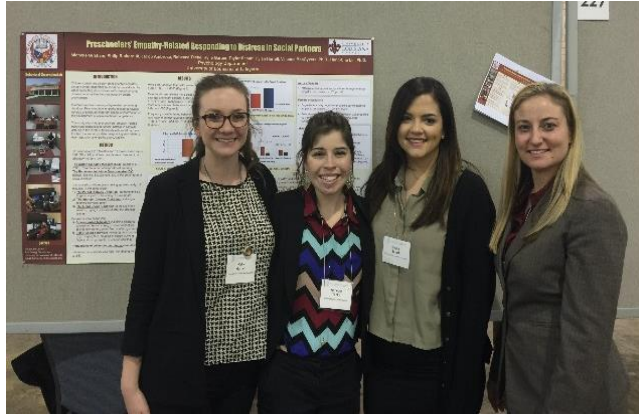


Conferences

Students working in the Developmental Laboratory have excelled in several regional, national, and international conferences. At the conference, there are numerous opportunities for students to be exposed to cutting-edge research and connect with researchers from different parts of the world. This is one of best opportunities to expose student researchers to the world of research and encourage them to become innovative in their research. Attending a conference like this definitely provides a means for me to bring my teaching and modeling as a researcher to a level far beyond what I can normally accomplish within a classroom or laboratory setting.

CammieJo Touchet, Demi Leleux, Jacob Ambrose, Ashley Hughes, Sophie Comeaux, Steven Stringfellow (from left to right) presenting at the Louisiana Undergraduate Research Conference, 2016.





Left: Kylie Garber, Rebecca Tacke, Taylor Schaff, and Michelle Grisham (from left to right) presenting at the Biennial Meeting of the Society of Research on Child Development (SRCD), Philadelphia, PA, 2015.

Right: Philip Richard and Taylor Schaff presenting at the Society for Research in Human Development Biennial Meeting, Austin, Texas, 2014.

Among these conferences, student researchers have topped their peers and won awards.

- **Philip Richard received the 2014 International Travel Award for Undergraduate Research (in the amount of \$1,000) offered by the XIX Biennial International Conference on Infant Studies, Berlin, Germany.**

Richard, P., Lin, H.-C., Søndergaard, S., Bourque, J., LaGrange, A., Schaff, A. (2014, July). *Cognitive empathy and social inhibition predict preschool girls' self-oriented behaviors in response to infant crying*. Presented at the XIX Biennial International Conference on Infant Studies, **Berlin, Germany**.

- **Joshua Landry won the 2nd place at the state level for the Undergraduate Research Competition at the Louisiana Psychological Association's 2012 Annual Convention.**

Landry, J., Lin, H.-C., & Cech, C. (2012, April). *A time course study of perception and emotions in response to infant crying*. Presented at the Louisiana Psychological Association's 2012 Annual Convention. Baton Rouge, Louisiana.

Conference Presentations Student Coauthors (highlighted) (All Peer Reviewed)

Lin, H.-C., Yang, Y., McFatter, R., & **Richard, P.** *Criminal Offenders' Dispositional Empathy, Perceived Parental Bonding, and Attachment Dimensions*. Poster presented at the 28th APS Annual Convention, May 26-29, 2016, in Chicago, IL, USA.

Grisham, M., Lin, H.-C., MacGyvers, V., Yang, Y., **Tacke, R.**, **Leleux, L.**, **Garber, K.**, **Harrell, D.**, & **Richard, T.** (2016, May) *To Engage or Disengage in an Infant Distress Situation? Preschoolers' Dispositions in Empathy and Social Inhibition Tell a Story*. Poster presented at the XX Biennial International Conference on Infant Studies New Orleans, LA.

Grisham, M., Lin, H.-C., MacGyvers, V., Yang, Y., Tacke, R., Leleux, L., Garber, K., Harrell, D., & Richard, T. (2016, May). *Distressed Yet Empathically Sensitive: the Organization of Preschoolers' Behavioral Responses to Infant Crying*. Poster presented the XX Biennial International Conference on Infant Studies New Orleans, LA.

MacGyvers, V., Richard, T., Harrell, D., Jensen, A., Grisham, M., Garber, K., Tacke, R., Yang, Y., Lin, H.-C. (2016, May). *People's Attitudes towards Public Breastfeeding: Individual Variability*. Poster presented the XX Biennial International Conference on Infant Studies New Orleans, LA.

Dick, S. J., MacGyvers, V. L., Lin, H.-C., Grisham, M., Tassin, J., Krueger, J (2015, November). *Integrated Music: Effects on Academic Growth in Impoverished Preschoolers. A research report*. Poster presented at the Annual Conference of the National Association for the Education of Young; Orlando, FL.

Grisham, M., Lin, H.-C., Richard, P., Tacke, R., Ambrose, J., MacGyvers, V., Garber, K., Schaff, T., Lin, H.- C., McFatter, R., (2015 May) *Dispositional Empathy and Social Inhibition Correlate with Preschoolers' Responses towards Social Others' Distress*. Poster presented at the 27th APS Annual Convention in New York, NY.

Grisham, M., Lin, H.-C., Richard, P., Tacke, R., Ambrose, J., MacGyvers, V., Garber, K., Schaff, T. (2015, March) *Correlates of preschoolers' empathy-related responding to social others' distress*. Poster presented at the 2015 Society of Research in Child Development, Philadelphia, PA.

Grisham, M., Lin, H.-C., Richard, P., Tacke, R., Ambrose, J., MacGyvers, V., Garber, K., Schaff, T. (2015, June) *Preschoolers' Empathy Related Responses to Distress in Social Partners*. Poster session presented at: From Research to Clinical Practice: Linking the Expertise. 16th International European Society for Child and Adolescent Psychiatry Congress, **Madrid, Spain**.

Richard, P., Lin, H.- C., Bourque, J., & MacGyvers, V. (2014, May) *The Effect of Familiarity on Preschoolers' Empathy towards Distress in Social Partners*. Poster submitted to the 26th APS Annual Convention, in San Francisco, CA.

Jeffery, E., Lin, H.- C., McFatter, R M., & MacGyvers, V.L. (2014, March) *The relations between parental depression, parenting stress, and child behavioral problems*. Society for Research in Human Development Biennial Meeting, Austin, TX.

Richard, P., Lin, H.- C., Bourque, J., Schaff, A., & MacGyvers, V. L. (2014, July) *Cognitive empathy and social inhibition predict preschool girls' self-oriented behaviors in response to infant crying*. Poster presented at the XIX Biennial International Conference on Infant Studies, **Berlin, Germany**.

Lin, H.- C., MacGyvers, V., McFatter, R., & Bourque, J. (2013, May) *Enrichment in Parents of Children with Autism*. Poster presented at the 25th APS Annual Convention, Washington, D.C. Findings were also presented at the UL System Academic Summit Conference held in Monroe, LA, April, 2013.

Student Achievement



Demi Leleux (left)

Demi received the Spring 2017 Outstanding Graduate for the Psychology Department at UL Lafayette

Cammie-Jo Touchet (right)

Cammie-Jo received the Spring 2017 Hait-Lewis Award for Academic Excellence in the Psychology Department at UL Lafayette

Jacob Ambrose (McNair Scholar)

Jacob received the Fall 2016 Hait-Lewis Award for Academic Excellence in the Psychology Department at UL Lafayette

Photo taken with Dr. Hung-Chu Lin at the 2016 Psi Chi Induction Night





Kylie Garber was selected as one of the 12 recipients of the prestigious **American Psychological Association's Summer Science Fellowship (SSF)**. The competitors included more than 400 students with exceptional qualifications from across the United States. Kylie traveled to George Mason University in summer, 2015 and obtained hands-on experience conducting cutting-edge research with some nationally-renowned researchers in psychology.

Kylie is the recipient of both the following:

1. Fall 2015 Outstanding Graduate for the Psychology Department at UL Lafayette
2. Fall 2015 Hait-Lewis Award for Academic Excellence in the Psychology Department at UL Lafayette

Philip Richard (McNair Scholar) is the recipient of the following awards / fellowships:

1. The Huel D. Perkins Diversity Fellowship (2015)
2. The Southern Regional Education Board (SREB) Doctoral Fellowship (2015)
3. The 2014 International Travel Award for Undergraduate Research (in the amount of \$1,000) offered by the XIX Biennial International Conference on Infant Studies, Berlin, Germany (previously mentioned)
4. Fall 2014 Outstanding Graduate for the Psychology Department at UL Lafayette
5. Fall 2014 Hait-Lewis Award for Academic Excellence in the Psychology Department at UL Lafayette



Photo taken with Dr. Hung-Chu Lin at the 2015 Psi Chi Induction Night

Graduate Students

Josephine Janice
Tayler A Richard
Janna Bourque

Undergraduate Students

Ashley K Hughes
Lauren LaHaye
Steven Stringfellow
Nicholas Barker
Mikaila Kinsland
Maddison Knot
Miranda Hebert
Julia Arceneuax
Patrick Conner
Edliyah Conner

Alumni

Josephine Janice
Demi J Leleux (PhD program at Drexel University)
Cammie-Jo E Touchet (Counseling Education program at UL Lafayette)
Michelle E Grisham (PhD Program in developmental psychology at the Northern Illinois University)
Jacob Ambrose (McNair Scholar) (PhD Program in clinical psychology at the Alliant International University)
Crystal Pefferkorn
Wai Ying Chan (Counseling Education program at the Louisiana State University)
Sophie N Comeaux (Master of Social Work program at the Louisiana State University)
Ashley R Legnon (Counseling Education program at UL Lafayette)
Rebecca N Tacke (Master's Program at ULL)
Philip Richard (LSU School of Psychology PhD Program)
Kylie L Garber (PhD Program in developmental psychology at the University of North Carolina at Chapel Hill. Kylie is working with scientists at the Frank Porter Graham Institute of Child Development at the UNC Chapel Hill.)
Taylor Schaff (Master's program at the University of North Texas)
Jessica Manuel (M.S., Specialist at the Therapy Center of Acadiana)
Janna Bourque (ULL Psychology Master's Program)
Liz Jef (M.S., Instructor in Psychology at the South Louisiana Community College in New Iberia)
Rhea Cooper (Counseling Education at UL Lafayette)
Katie Durpre

Janna Jones
Holly Monk
Ashley Schaff, M.S.
Danielle Broussard (McNair Scholar) (Southern University Law Center)
Felicia Faciane
Josh Landry
Lauren Ashe
Anna LaGrange (Master of Social Work at the Louisiana State University)
Jasmine Ambrose, M.S.W.
Jessica Asmar (Biology major)
Stinne Søndergaard, (PhD program at the Florida State University).
Mie Turegano (M.S., Support Coordinator at Community Resource Center, Baton Rouge, LA)
Taylor Schaff (Graduate Program at the University of North Texas)