Programs in Teaching as Applied Behavior Analysis and the Education of Students with Behavior Disorders

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Comprehensive Application of Behavior Analysis to Schooling (CABAS®)
Website: www.cabasschools.org

Updated 5/2019

General Description of the Masters of Arts in Teaching as Applied Behavior Analysis: A Strategic Science of Teaching

(New York State Dual Certification Birth through Grade 6)

Description of the Program: What and How Teachers Are Trained

Our program is recognized for its excellence in training teachers in using scientific tools to bridge the educational gap and accelerate learning for all children (Greer, 2007). It is also internationally recognized for training teachers, researchers, and leaders in early educational and language developmental interventions for children with autism spectrum disorders (ages 2-5) and effective inclusion practices. Our graduates are expert in identifying missing verbal developmental stages (Greer & Du, 2015; Greer & Keohane, 2007, 2009; Greer & Ross, 2008) and providing interventions that result in children attaining developmental stages when they are missing. *Teaching as Applied Behavior Analysis* is a strategic scientific educational model in which all instruction used by teachers is based on scientific evidence. In this approach, teachers use scientific procedures in the process of fitting the appropriate science-based practices to individual students' learning and language developmental needs. The program prepares graduates to be dually certified in general and special education from birth to Grade 6 in New York State and reciprocating states and also prepares students to sit for the exam leading to NYS licensure in ABA. Finally, students who successfully complete the MA core courses will satisfy the requirements to sit for the Board Certified Behavior Analyst (BCBA) exam. Students accepted into the program are placed in teacher assistant positions in model schools and classrooms that practice teaching as applied behavior analysis (1 The training of teachers is also based on scientifically tested procedures. Teacher trainees are taught until they master the science and its application with children with and without disabilities from 1.4 years through fifth grade.

Content of Courses and the Application of the Content

All of the training is done in classrooms that practice the CABAS

® and the CABAS® Accelerated Independent Learner Model (AIL) (Greer, 2002, 2007). BCBA- certified teachers and behavior analyst supervisors who are experienced scientists and who have achieved CABAS® Board competency ranks supervise our MA students in their school placements. Students attend classes in the evening and the content of the core courses are directly related to the practices used in the school placements. The content of the 12 core graduate courses in include general applications of applied behavior analysis, basic science principles, epistemology underlying radical behaviorism including interbehaviorism, and advanced and specialized expertise in Teaching as Applied Behavior Analysis. This specialized content consists of scientific findings for the management of behavior, teaching, curriculum design and procedures to identify and induce missing levels of language and social development. The experience in the schools involves applications of the content of the core courses. Scientific procedures are also used to implement evidence-based tactics with all of the children in the schools. The effectiveness of the range of scientific tactics is well documented in the literature, as is the effectiveness of the school model used in the settings where our students train. Recent evidence, concerning the outcomes for the children in the in the general education classrooms where our trainees are taught, shows that the children in one second-grade class performed from two to six grade levels above grade level on standardized tests across reading, language, and mathematics. These children included those who received free or reduced lunch (42% of the class), minority children (35% of the class), English language learners (23%), children with autism spectrum diagnoses (23%), and upper middle class children (23%). Teachers and teacher assistants collect direct measures of all the children's responses to instruction and the achievement of state standards. The model classrooms where our MA and Ph.D. graduate students are trained include the Fred S. Keller Preschool (children with and without diagnoses from 16 months to age 5), as well as the Morristown AIL general education classes Pre-K-5 and Rockland BOCES CABAS® classes.

The Type of Students We Accept

Successful applicants will present evidence of superior undergraduate academic performance in liberal arts degrees, excellent writing skills, interest in using scientific procedures to teach, strong recommendations, and a passion for accelerating the learning and development of children from economically disenfranchised communities, children with native learning disabilities, and children from upper middle class students in inclusion settings. Students must submit GRE scores as part of their application. However GRE scores are less important than undergraduate grades and evidence of interest in the sciences of behavior and learning as they can be applied to improving the educational and social prognosis of children. The program is academically rigorous and the applied component is demanding. Graduates of the program are highly sought after by public schools and graduate programs. Between 15 and 25 applicants are matriculated annually. Typically there are 40 MA students and 25 Ph.D. students in the program.

Research is a central component of the training—both the application of research using science-based tactics and measurement, and the generation of new research. The faculty and the students produce a substantial body of research publications and present

at international scientific conferences each year. Programmatic research is conducted in the following areas: effective classroom practices, language/verbal developmental interventions that result in children learning to learn in different ways, observational learning, and systems-wide scientific approaches to education. Publications by the faculty and students for the past 5 years are listed later in this document.

The program requires excellent writing skills, a strong undergraduate record, interest in a science of schooling, and a passion for working with all children. Students are taught to use tested strategies to locate sources of learning and behavior problems and to select tested behavior analytic tactics and strategies that they in turn use to solve the learning or behavior problem. In the MA program, students complete 10 to 15 replication studies, complete with reports, master advanced behavior analysis texts, and learn to teach children using advanced behavior analytic repertoires until they achieve measurably effective competencies. MA graduates are in high demand for school positions, early intervention programs around the world, and Ph.D. programs in applied behavior analysis. Graduates of the Ph.D. program are leaders in the field of applied behavior analysis and evidence- based science of teaching and work in universities, direct schools, or do fulltime research. Over 200 students have achieved Ph.D.s in our program over the last 47 years.

Teaching as Applied Behavior Analysis Faculty and School Supervisors

Full-Time Faculty

- Program Director Professor R. Douglas Greer, Ph.D., CABAS® Senior Behavior Analyst, Senior Research Scientist, Fellow of the Association for Behavior Analysis International. Research in Verbal Behavior Development Theory, naming (i.e., how children learn language function incidentally), pre-verbal foundational behavioral cusps, generalized imitation, system components of effective schools, teacher education, conditioned reinforcement
- Professor Jessica Singer-Dudek, Ph.D., Director of Transdisciplinary Programs in Applied Behavior Analysis, BCBA-D, LBA, CABAS® Senior Behavior Analyst, Associate Research Scientist, CABAS® Professional Advisory Board Member, CABAS® Behavior Analyst Consultant. Research in rate of responding and effects on maintenance and learning of more complex repertoires, conditioned reinforcement as a function of observation, acquisition of observational learning repertoires, foundational verbal development, system components of effective schools
- Daniel M. Fienup, Ph.D., BCBA-D, NY LBA. Research in behavior analytic instructional design.

Adjunct and Clinical Faculty

- Jo Ann Pereira-Delgado, Ph.D., BCBA-D, CABAS® Senior Behavior Analyst, Assistant Research Scientist, AIL Consultant, Adjunct Associate Professor. Research in sources for Generalized Imitation, procedures leading to an observational learning capability, pre-verbal foundational cusps
- Claire Cahill, Ph.D., BCBA-D, LBA, CABAS® Associate Behavior Analyst, Assistant Research Scientist, Adjunct Assistant Professor. Research in naming, Verbal Behavior Development

- Jennifer Longano, Ph.D., BCBA-D, CABAS® Senior Behavior Analyst, Assistant Research Scientist, Assistant Director of the Fred S. Keller School, Adjunct Assistant Professor. Research in conditioned reinforcement by observation, stimulus-stimulus pairing and emergence of naming, echoics and emergence of Naming, conditioned reinforcement for visual observation and accelerated learning
- Lin Du, Ph.D., BCBA-D, LBA, CABAS® Senior Behavior Analyst, Assistant Research Scientist, Adjunct Assistant Professor. Research in Generalized Imitation, Verbal Behavior Development
- Robin Nuzzolo, Ph.D., BCBA-D, CABAS® Senior Behavior Analyst, Assistant Research Scientist, Director of Fred S. Keller. Research in transformation of EO control, tacts to replace palilalia, conditioned reinforcement and stereotypy, verbally governed and observational learning by teachers
- Jeanne Speckman, Ph.D., CABAS® Senior Behavior Analyst, Assistant Research Scientist, BCBA-D Associate Director of the Fred S. Keller School, Adjunct Assistant Professor. Research in naming, emergent suffixes, and joining of listener and speaker capabilities
- Celestina Rivera-Valdes, EdM, CABAS® Assistant Behavior Analyst, Assistant Research Scientist, Assistant Director of the Fred S. Keller School. Research on Verbal Behavior Development and system components of effective schools
- Regina Spilotras, EdM, CABAS® Associate Behavior Analyst, BCBA-D Supervisor of Rockland BOCES district-based CABAS® classes
- Jennifer Weber, CABAS® Associate Behavior Analyst. Research in writing, observational learning, and Verbal Behavior Development
- Susan Buttigieg, Ph.D., BCBA-D, LBA, CABAS® Associate Behavior Analyst. Research in naming, observational learning, and Verbal Behavior Development

If you are accepted into the program please e-mail Professor Dudek, dudek@tc.columbia.edu, so that she can begin arranging internship placements for you.

Preparing Teachers and Teacher Trainers Who can Bridge the Educational Gap: A Comprehensive Science Based Teacher Training Program

The objective of our MA and Ph.D. programs is to prepare teachers and teacher trainers to use measurably effective instructional practices *to accelerate all children's educational progress*, including measurable increases in enjoying learning and schooling, academic literacy, problem solving, and self-management. A key to doing this is the acceleration of children's language development that appears to be the root problem faced by English language learners, minority children from economically disenfranchised families, and children with autism spectrum diagnoses. Recent research findings provide exciting new ways to do this. Moreover, accelerated instruction is needed for children from well-to-do-families, if we are to assume international leadership in education. In order to meet these objectives we provide instructional experiences to teach our graduate student teacher trainees the following aspects of effective teaching:

- Master using research-based procedures for all aspects and subject areas of

teaching preschool and elementary age children (all types of aba measures, designs, IOA estimates, and all types of verbal behavior, verbal behavior development, and derived relations measures and designs).

- Manage classrooms and schools such that children are well behaved and motivated to learn, using positive and non-coercive practices.
- Master the existing science of learning and teaching as it applied to the varied needs of children (e.g., 200-plus tactics).
- Master protocols to identify and induce missing language developmental cusps and capabilities that result in children learning to learn material they could not learn before, and how to learn in new ways (e.g., by observation and incidental experiences).
- Master how to use key educational standards and how to match existing tested curricula and tested teaching practices to categories of students and individual students in order to ensure that the standards are achieved.
- Master how to continuously and directly measure all students' progress in achieving standards and new developmental stages and use that measurement to drive instructional practice, including the selection of alternative scientific practices when initial best practices are not successful with children.
- Master how to scientifically analyze the source of student learning problems and inadequate teaching.
- Learn to draw on evidence from cognitive learning and developmental research, reading/writing literacy research implemented through procedures from teaching as applied behavior analysis.
- Master how to teach children to be self-learners.
- Identify and design functional curricula building on the theory and science of verbal behavior, radical behaviorism (as an extension of natural selection), the foundations of pragmatism (i.e., Peirce, James, Dewey),

All students accepted into the MA program are placed in full-time internships at our CABAS

® Schools (see www.cabasschools.org), where they are mentored by those with more expertise. These mentors are often students in the Ph.D. program in behavior analysis. They train in the schools in the daytime and attend graduate classes in the evenings. Whenever possible, the internships provide salaries starting at around $22,000 for beginning MA students, but no tuition benefits. The CABAS® schools are run by behavior analysts who hold advanced CABAS® Board ranks and have research track records. Thus, almost all of the students accepted into the program are funded. All students must complete our MA courses and certification program. Even if a student is accepted as a Ph.D. student, continuation in the Ph.D. program is contingent on his/her performance in the MA program. This later requirement is necessary because the content of our Ph.D. program requires the mastery of: (a) advanced applied behavior analysis, the specialized expertise in teaching as applied behavior analysis, curricular design based on the philosophy of contemporary behaviorism, and the verbal developmental protocols developmental research and practice. These combinations of repertoires are needed to succeed in the Ph.D. program and mentor MA students. However, once the MA is completed, all prior MA courses with satisfactory grades will be credited towards the Ph.D.. If a student is dually certified in New York or eligible to be certified and holds a Masters degree he/she will need only to take the core MA requirements and do the MA teaching assistant experience/internship. Teachers College does not accept any transfer credits for MA programs.

Teachers in CABAS® schools and our graduate students receive ongoing, in-situ training through three-tiered training modules leading to achievement of CABAS® Professional Advisory Board competencies for the rank of Teacher I, II, or Master Teacher. These modules incorporate content across all core courses and application in the schools. The ranks act to synthesize expertise and have been reported in the research literature as strong predictors of student and client outcomes. MA teaching assistants in our schools complete the same rank requirements as Teachers, but in smaller increments. Completion of each teacher rank requires at least one calendar year of full time teaching in our CABAS® schools. The Master Teacher rank may take longer to complete. Teacher ranks consist of three components: 1) Verbal behavior about the science, which includes mastery of material presented in scientific texts or research/conceptual publications, 2) Contingency-shaped repertoires, which include teacher presentation of instruction and consequation of student responding and management of classroom and behavioral contingencies, and 3) Verbally meditated repertoires that involve analysis of student or class-wide data and decision making, including implementation of tactics from the research literature of the science of applied behavior analysis. Teacher mentors who have achieved the rank of Master Teacher may go on to complete Assistant, Associate, and Senior Behavior Analyst ranks, that include 5 components dedicated to: 1) Scholarship expansion, 2) Peer teaching and mentorship, 3) New research findings, 4) Direct or systematic replications, 5) New conceptual contributions to the science or to the CABAS® model. Those who publish research and conceptual papers and who present at national and international conferences may also qualify for Assistant, Associate, and Senior Research Scientist (Ph.D. required) ranks. Only those whose names appear on this website have achieved ranks that have been recognized by the CABAS® Board.

While our course sequence and internship experiences do allow our graduates and trainees to sit for the BCBA and NYS licensure exams, the CABAS

® Board rank competency recognition is direct and reliable evidence of advanced ABA expertise and specialization in teaching as ABA. All of our MA and Ph.D. graduates are licensed teachers and hold New York State certification (or other state certifications) across 4 areas: early childhood regular and special education and childhood regular and special education. The expertise signified by these CABAS® ranks far surpasses any assessment given by the BACB for teaching children. The BCBA certification provides basic knowledge of the field, and those who have such certification are more likely to be more competent than other individuals who do not have advanced degrees in the various applications of behavior analysis. CABAS® is not officially used in home based programs except in London. See the following for an independent evaluation of that program.

Reed, P., Osborne, L. A., & Corness, M. (19, December 2006). Brief report: The effectiveness of different home-based behavioral approaches to early teaching intervention. *Journal of Autism and Developmental Disorders.*
www.springerlink.com/content/3q30031815t32534/fulltext.html

RECENT PUBLICATIONS ARTICLES AND CHAPTERS BY OUR FACULTY AND STUDENTS
(May, 2019 Revision. All are peer reviewed including the electronic journals)

Books and Articles Related to the CABAS® Model

R. Douglas Greer (2002). *Designing teaching strategies: An applied behavior analysis systems approach.* New York: Academic Press. ISBN# 0-12-300850.

Greer, R. D., & Ross, D. E., (2008). *Verbal behavior analysis: Developing and expanding complex communication in children with severe language delays*. Boston: Allyn & Bacon/Merrill.

Greer, R. D., Keohane, D., Healey, O. (2002). Quality and comprehensive applications of behavior analysis to schooling. The Behavior Analyst Today, 3 (2), 120-132. www.behavior-analyst-online.org

Greer, R. D. & Keohane, D. (2009). CABAS® contributions to identifying, inducing, and sequencing verbal development, pp. 000-000. In P. Reed, *Behavioral Theories and Interventions for Autism.* New York: Nova.

Singer-Dudek, J., Speckman, J., & Nuzzolo, R. (2010). A comparative analysis of the CABAS® model of education at the Fred S. Keller School: A twenty-year review. *The Behavior Analyst Today*, 11(4), 253-264.

Recent Faculty and Student Publications

Experimental Research Papers Published in 2019

Cao, Y. & Greer, R. D. (2019, on line). Mastery of Chinese phoneme sounds establishes bidirectional naming in Chinese for preschoolers with naming in English. *Analysis of Verbal Behavior*. DOI 10.1007/s40616-018-0106-1

Greer, R. D., Pohl, P., Du, L., & Lee-Moschella (in press for 2019). Bidirectional operants as behavioral metamorphosis, in Hayes, L. & Fryling, M. (Eds.),

Applied Behavior Analysis in Language and Cognition.
Longano, J., Hranchuk, K., & Greer, R. D. (2019). Teaching preschool aged children the structure and function of writing. *Behavior Development*.

Experimental Research Papers Published in 2018

Brodsky, J., & Fienup, D. M. (2018). Sidman goes to college: A systematic review and meta-analysis of equivalence-based instruction in higher education. *Perspectives on Behavior Science, 41*, 95-119. doi: 10.1007/s40614-018-0150-0
Cengher, M., Budd, A., Farrell, N., & Fienup, D. M. (2018). A review of transfer of stimulus control procedures: Implications for selecting effective and efficient skill acquisition. *Journal of Developmental and Physical Disabilities, 30*, 155-173. https://doi.org/10.1007/s10882-017-9575-8
Critchfield, T. S., Greer, R. D., Johnson, K., Morrow, J. E., Nevin, J. A., & Perone, M. (2018). Role model pursing expansive science of behavior: James G. Holland *Perspectives in Behavioral Science*, https://doi.org/10.1007/s40614-018-155-8
Dalfen, S., Fienup, D. M., & Sturmey, P. (2018). Effects of a contingency of quiz accuracy on exam scores. *Behavior Analysis in Practice, 11*, 106-113. doi: 10.1007/s40617-018-0226-z
Fienup, D. M. (2018). The future of verbal behavior: Integration. *The Analysis of Verbal Behavior, 34*, 18-23. https://doi.org/10.1007/s40616-018-0108-z
Fuller, J., & Fienup, D. M. (2018). A preliminary analysis of mastery criterion level: Effects on response maintenance. *Behavior Analysis in Practice, 11*, 1-8. doi: 10.1007/s40617-017-0201-0
Hranchuk, K., Greer, R. D., & Longano, J. (2018). Instructional demonstrations are more efficient than consequences alone for children with naming, *The Analysis of Verbal Behavior*. DOI: 10.1037/bdb0000081
Pohl, P., Greer, R. D., Du, L., & Lee-Moschella, J.L. (2018). Verbal development, behavioral metamorphosis, and the evolution of language. *Perspectives on Behavior Science.* https://doi.org/10.1007/s40614-018-00180-0

Experimental Research Papers Published in 2017

Du, L., Speckman, J., Medina, M., & Cole-Hatchard, M. (2017). The Effects of an auditory matching iPad app on three preschoolers' advanced listener literacy and Echoic Responses. *Behavior Analysis in Practice.* doi:10.1007/s40617-017-0174-z
Singer-Dudek, J., Park, H. L., Lee, G., & Lo, C. (2017). Establishing the transformation of motivating operations across mands and tacts for preschoolers with developmental delays. *Behavioral Development Bulletin*. Advance online publication http://dx.doi.org/10.1037/bdb0000045

Eby, C. M. & Greer, R. D. (2017). Effects of social reinforcement on the emission of tacts by preschoolers. *Behavioral Development Bulletin*. Advance online publication http://dx.doi.org/10.1037/bdb0000043.
Fienup, D. M., & Brodsky, J. (2017, Advanced online copy). Effects of mastery criterion

on the emergence of derived equivalence relations. *Journal of Applied Behavior Analysis*. doi: 10.1002/jaba.416

Fuller, J., & Fienup, D. M. (2017, Advanced online copy). A preliminary analysis of mastery criterion level: Effects on response maintenance. *Behavior Analysis in Practice.* doi: 10.1007/s40617-017-0201-0

Greer. R. D., Pohl, P. Du, L., & Moschella, J. L. (2017). The separate development of children's listener and speaker behavior and the intercept as behavioral metamorphosis. *Journal of Behavioral and Brain Science, 7,* 674-704. http://doi.org/104236/jbbs.2017.

Schmelzkopf, J., Greer, R. Douglas, Singer-Dudek, J., & Du, L. (2017). Experiences that establish interest in speaking and listening to others. *Behavioral Development Bulletin.* Advance online publication. http://dx.doi.org/10.1037/bdb0000026.

Ward-Horner, J. C., Cengher, M., Ross, R. K., & Fienup, D. M. (2017). Arranging work requirements and the distribution of reinforcers: A brief review of preference and performance outcomes. *Journal of Applied Behavior Analysis, 50,* 181-185. doi: 10.1002/jaba.350

Experimental Research and Conceptual Papers Published in 2016

Du, L., Nuzzolo, R., & Alonso-Álvarez, B. (2016). Potential benefits of video training on fidelity of staff protocol implementation. *Behavioral Development Bulletin, 1,* 110-121.

Greer, R. D. (January-February 2016). History: Remembering Fred Keller. *Operants.* Cambridge, MA: B. F. Skinner Foundation.

Experimental Research Papers in 2015

Greer, R. D. & Han, H. A. H. (2015). Establishment of conditioned reinforcement for visual observing and the emergence of generalized visual identity matching and preference for books with three Kindergarteners with ASD. *Behavior Development Bulletin*. http://dx.doi.org/10.1037/h0101316

Howarth, M., Dudek, J. & Greer, R. D. (2015). Establishing derived relations for stimulus equivalence in children with severe cognitive and language delays. *European Journal of Behavior Analysis, 16*(1), 49-81. doi: 10.1080/15021149.2015.1065635

Greer, R. D., & Du, L. (2015). Experience and the onset of the capability to learn the names of things by exclusion. *The Psychological Record, 65(*2), 355-373. doi 10.1007/s40732-014-0111-2.

Greer, R. D., & Du, L. (2015). Identification and establishment of reinforcers that make the development of complex social language possible. *International Journal of Behavior Analysis and Autism Disorder, 1*(1), 13-34.

Du, L., Broto, J. & Greer, R. D. (2015). The effects of the establishment of conditioned reinforcement for observing responses for 3D stimuli on generalized match-to- sample in children with autism spectrum disorders. *European Journal of Behavior Analysis, 16*(1), 82-98. doi.1080/15021149.2015.1065655

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Oblak, M., Greer, R. D., & Singer-Dudek, J. (2015). Valuation alteration: Stimuli increase in value when preschoolers deliver them to peers. *The Psychological Record, 65*(4), 705-716. doi 10.1007/s40732-015-0140-5
Choi, J., Greer, R. D., & Keohane, D. (2015). Effects of auditory matching on the intercept of speaker and listener repertoires. *Behavioral Development Bulletin, 20*(2), 000-000. doi.org/10.1037/h010131

Experimental Research Papers in 2014

Lee Park, H., & Speckman, J. (2014). Using a rapid echoic tact procedure to reduce vocal stereotypy and palilalia and increase tacts. *Journal of Emotional & Behavioral Disorders, 30,* 233-256.
Maffei, J., Singer-Dudek, S., & Keohane, D. (2014). The effects of the establish of adult faces and/or voices as conditioned reinforcers for children with ASD and related disorders. *Acta de Investigacion Psicologia, 4*(3), 1621-1641.
Cahill, C. S., & Greer, R. D. (2014). Actions vs. words: How we can learn both. *Acta de Investigacion Psicologia, 4*(3), 1716-1745.
Longano, J. M. & Greer, R. D. (2014). Is the source of naming multiple conditioned reinforcers for observing responses? *The Analysis of Verbal Behavior, 31* (1), 96- 117.
Broto, J. & Greer, R. D. (2014). The effects of functional writing contingencies on second graders' writing and responding accurately to mathematical algorithms. *The Behavioral Development Bulletin*, *19*(1), 7- 23.
Du, L. & Greer, R. D. (2014). Validation of adult generalized imitation topographies and the emergence of generalized imitation in young children with autism as a function of mirror training. *The Psychological Record*. DOI 10. 107/s40732- 0050-y

Experimental Research Papers In 2013

Singer-Dudek, J. & Oblak, M. (2013). Peer presence and the emergence of conditioned reinforcement from observation. *Journal of Applied Behavior Analysis, 46*, 592- 602. doi: 10.1002/jaba.72
Singer-Dudek, J., Choi, J., & Lyons, L. (2013). The effects of an observational intervention on the emergence of two types of observational learning. *European Journal of Behavior Analysis*, *14*, 329-347.
Zrinzo, M. & Greer, R. D. (2013). Establishment and maintenance of socially learned conditioned reinforcement in young children: Elimination of the role of adults and view of peer's faces. *The Psychological Record, 63*(1), 1-20.

Experimental Research Papers in 2012

Lee, G. & Singer-Dudek, J. (2012). Effects of fluency versus accuracy training on endurance and maintenance of assembly tasks for four adolescents with developmental disabilities. *Journal of Behavioral Education, 21*(1), 1-17, DOI: 10.1007/s10864-011-9142-9.

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Speckman-Collins, J. & Greer, R. D. (2012). Multiple exemplar instruction and the emergence of generative production of suffixes as autoclitic frames. *The Analysis of Verbal Behavior*, *28*(1), 83-99.

Experimental Research Published in 2011

Singer-Dudek, J., Oblak, M., & Greer, R. D. (2011). Establishing books as conditioned reinforcers for preschool children as a function of an observational intervention. *Journal of Applied Behavior Analysis*, *44*, 421-434.

Gilic, L., & Greer, R. D. (2011). Establishing naming in typically developing children as a function of multiple exemplar speaker and listener experiences. *The Analysis of Verbal Behavior.27*, 157-178.

Luke, N., Greer, R. D., Singer-Dudek, J., & Keohane, D. (2011). The emergence of autoclitic frames in atypically and typically developing children as a function of multiple exemplar instruction. *The Analysis of Verbal Behavior. 27*, 141-156.

Greer, R. D., Corwin, A., & Buttigieg (2011). The effects of the verbal developmental capability of Naming on how children can be taught.*(Acta de Investigacion Psicologia*, *1*(1),23-54.

Greer, R. D., Pistoljevic, N., Cahill, C., & Du, L. (2011). Effects of conditioning voices as reinforcers for listener responses on rate of learning, and preferences for listening to stories in preschoolers with autism. *The Analysis of Verbal Behavior. 27*, 103-124.

Experimental Research Published 2010

Greer, R. D. & Du, L. (2010). Generic Instruction versus Intensive Tact Instruction and the Emission of Spontaneous Speech. *The Journal of Speech-Language Pathology and Applied Behavior Analysis*, *5(1*), 1-19. ISSN 1932-4731. http://baojournal.com/SLP-ABA%20WEBSITE/SLP-ABA%20VOL-5/SLP- ABA-5-1.pdf

Eby, C. M., Greer, R. D., Tullo, L. D., Baker, K. A., & Pauly, R. (2010). Effects of multiple exemplar instruction on the transformation of stimulus function across written and vocal spelling instruction responses by students with autism. *The Journal of Speech-Language Pathology and Applied Behavior Analysis*, *5*(1), 20-31. ISSN 1932-4731. http://baojournal.com/SLP-ABA%20WEBSITE/SLP- ABA%20VOL-5/SLP-ABA-5-1.pdf

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Experimental Research Published in 2009

Pereira-Delgado, J. A., & Greer, R. D. (2009). The effects of peer monitoring training on the emergence of the capability to learn by observing instruction received by peers. *The Psychological Record, 59.* 407-434.

Published Conceptual Papers in Journals and Chapters in Books

Singer-Dudek, J., Speckman, J., & Nuzzolo, R. (2010). A comparative analysis of t he CABAS® model of education at the Fred S. Keller School: A twenty-year review. *The Behavior Analyst Today*, 11(4), 253-264.Greer, R. D., & Longano, J. (2010). Naming a rose: How we may learn to do it. *The Analysis of Verbal Behavior, 26,* pp. 73-106.

Greer, R. D., & Longano, J. (2010). Naming a rose: How we may learn to do it. *The Analysis of Verbal Behavior, 26,* pp. 73-106.

Greer, R. D. (2009). A science of education. In K. Khanna, V. Anand, & S. Abraham (eds.) *Quality school education for all* (pp. 66-93). EMTA: New Delhi, India.

Greer, R. D. & Speckman, J. (2009). The integration of speaker and listener responses: A theory of verbal development, *The Psychological Record, 59,* 449-488.

Greer, R. D. & Keohane, D. (2009). CABAS® contributions to identifying, inducing, and sequencing verbal development, pp 000-000. In P. Reed, *Behavioral Theories and Interventions for Autism.* New York: Nova.

Keohane, D., Pereira-Delgado, J. & Greer, R. D. (2009). Observing responses: Foundations of higher order verbal operants, pp. 35-76. In Y. Barnes-Holmes and R. A. Rehfeldt (Eds.). Applications of Relational Frame Theory. Harbringer Press.

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MA Program in Teaching as Applied Behavior Analysis
Core Courses and Cognate Course Content

(47 Credit Hours)
(Certification in Regular and Special Education, Birth-Grade 6)
Licensed Behavior Analyst approved Courses
Behavior Analyst Certification Board Verified Course Sequence

Cognate I: Teaching as Applied Behavior Analysis, 30 Credits,
Cognate II: Curricular and Instructional Tactics from Other Behavioral Sciences. 9 Credits,
Cognate III: Ethical and Professional Treatment of Children and Families, 8 Credits

COGNATE I: **Teaching as Applied Behavior Analysis**
(30 Credit Hours)
Level 1- Teaching Listener, Speaker, and Intellectual Foundations (Birth – Kindergarten Common Core Standards, English Excellence in Education Standards, and CABAS® Standards)

HBSE 4015: **Applied Behavior Analysis I: Concepts and Principles in Pedagogy, Curriculum, and Management** (3 Credits). This course provides a comprehensive introduction to the basic concepts and principles of the science of applied behavior analysis, measurement and data analysis, and experimental design. The concepts, practices, and analytic strategies of the science provide the novice or experienced teacher with the means to provide those educational outcomes for students and the community that are necessary for the well-being of the student and society.

HBSE 4044: **Research Methods in Pedagogy, Curriculum, and Management** (3 Credits). This course covers pedagogical and curricular design repertoires for realizing national and international educational objectives for children from pre-listener to early reader skills (Core curricular Standards, English Excellence in Education Standards, and CABAS® Standards, Preschool Through Kindergarten). This course focuses on identification and assessment of behavioral or instructional problems, identification and implementation of relevant tactics from the research literature of the science of behavior, individualized student assessment and the selection of curricula for children at early levels of verbal behavior, and CABAS®.

HBSE 4704 (001): Student Teaching and Observation (3 Credits)

In this first of four courses, students will learn to identify and effectively measure and analyze student progress, apply teaching strategies and tactics based on the science of behavior, implement protocols associated with developmental verbal capabilities, and

design of databased lesson plans. Students work towards completing the CABAS®

Board Certified Teacher II and I ranks.

HBSE 4015 provides basic verbal behavior about the science, **HBSE 4044** provides assessment and selection of curricular materials as they are wedded to the related pedagogy for individualizing instruction to students with diverse needs who range from Pre- Speaker to Early Reader Repertoires and **HBSE 4704 (001)** provides the relevant field training to competency criteria that occurs simultaneously with the above coursework.

Level 2- Foundations of Literacy, Problem Solving, Self-Management and Enlarged Community of Interests (Grades 1-3 Common Core Standards, English Excellence in Education Standards, and CABAS® Standards)

HBSE 4016: Applied Behavior Analysis II: Foundational Concepts and Epistemology of Basic and Applied Behavior Analysis (3 Credits). This course covers teaching operants and higher order operants associated with academic literacy, problem solving, self-management, and an enlarged community of reinforcers. The focus of this course is on the principles of teaching and learning as well as the measurement and experimental analysis of relevant tested tactics of a science of teaching.

HBSE 4045: Curricular and Pedagogical Operations for Teaching the Foundations of Functional Academic Literacy (3 Credits). This course covers the identification, implementation, and analysis of pedagogical tactics and curricular design repertoires for realizing national and international educational objectives for children with early to advanced self-editing and self-management repertoires (Grades pre-K through 2). The course focuses on empirically demonstrated, effective behavioral curricula and methods of behavioral education.

HBSE 4704 (002): Student Teaching and Observation (3 Credits). In the second of this four-semester course sequence, students learn to identify and effectively measure and apply teaching strategies and tactics based on the science of behavior, implement protocols associated with developmental verbal capabilities, and design data-based lesson plans. Students work towards completing the CABAS® Board Certified Teacher I and II ranks.

HBSE 4016 covers the basic and advanced applied science and the systems science of teaching as applied behavior analysis and includes teacher leadership (teaching and monitoring teacher assistants, working with school psychologists and social workers),

advanced analytic repertoires, parent communication and education strategies to generalize learning derived from a systems approach to schooling. **HBSE 4045**

covers assessment and design of curricular materials as they are wedded to the related pedagogy for the target students, and **HBSE 4704 (002)** provides the relevant field training to competency criteria done concurrently with the above coursework.

Level 3- Advanced Academic Literacy, Self-Management, Problem Solving, and Expanded Community of Interests (Grades 3-6 and foundations of middle school Common Core Standards, English Excellence in Education Standards, and CABAS® Standards)

HBSE 4017: Applied Behavior Analysis III: Verbal Development, Curriculum, and Pedagogy

(3 Credits). This course covers verbal behavior analysis, the identification of verbal developmental cusps and capabilities and how to induce them, and complex learning and applied tactics for teaching advanced repertoires. The purpose of ABA III is to provide our teacher trainees with the wherewithal to identify missing verbal developmental cusps and capabilities as well as pre-verbal foundational cusps, and to implement protocols to induce those verbal developmental cusps and capabilities.

HBSE 4046: Curricular and Pedagogical Operations for Teaching Advanced Functional Academic Literacy (4th Grade through Early Middle School) (3 Credits). This course covers pedagogical and curricular repertoires for realizing national and international educational objectives for children with early to advanced self-editing and self-management repertoires (grades 4 through 6). The course outlines empirically demonstrated, effective behavioral curricula and methods of behavioral education.

HBSE 4704 (003): Student Teaching and Observation (3 Credits). Students learn to identify and effectively identify and apply teaching strategies and tactics based on the science of behavior, implement protocols associated with developmental verbal capabilities, and design database lesson plans. Students work towards completing the CABAS® Board Certified Teacher I and II ranks.

HBSE 4704 (004): Student Teaching and Observation (3 Credits) This course, taken during the fourth semester of the program focuses on the mentorship and leadership repertoires of a Master Teacher.

HBSE 4017 covers the basic and applied science and the systems science of teaching as applied behavior analysis with a focus on verbal behavior analysis and experimental procedures for the identification and induction of verbal developmental

cusps and capabilities. **HBSE 4046** covers assessment and design of curricular materials as they are wedded to the related pedagogy for the target students, and

HBSE 4704 (003) provides the relevant field training to competency criteria done concurrently with the above coursework. The fourth semester of **HBSE 4704 (004)** focuses the repertoires of a teacher mentor.

COGNATE II: Scientifically Based Curricular and Instructional Tactics from Cognitive and Community Behavioral Sciences (9 Credits)
Findings from the research in cognitive psychology, health education, and generic educational research concerned with reading, memory, problem solving, decision-making, and self-management.

HBSK 4072: Theory and Techniques of Assessment and Intervention in Reading (3 Credits) (Professor Perin and literacy Faculty)

HUDK 4027: Development of Mathematical Thinking (3 Credits)
or alternative course in Methods in Mathematics (e.g., MSTM 5010 with Professor Walker or Professor Garrity)

HBSK 4074 Reading and Comprehension Strategies and Study Skills (3 Credits) (Professor Peverly)

Alternately, students may take HBSK 5099: Writing Interventions Theory and Practice in lieu of one of the reading courses if scheduling conflicts exist

COGNATE III: Ethical and Professional Treatment of Children and Families (6-8 Credits)

HBSE 4048: Working with Families of Children with ASD (3 Credits). This course covers applied and conceptual methods for working with families of children with autism and related disorders. The course focuses on the effective design of measurable strategies and research-based tactics for parents to use within the family setting.

HBSE 4049: Professional and Ethical Issues in Teaching as Applied Behavior Analysis (3 Credits). This course focuses on the ethical, professional, and legal issues impacting those who apply the science of behavior to vulnerable populations (e.g., young children or children with disabilities), including those who work in clinical, home, and school settings. The course includes review the BACB code of conduct for behavior analysts and encompasses the legal and professional issues surrounding being a behavior analyst teacher. Finally, this course incorporates legal and ethical issues surrounding the conduct of research, including the Teachers

College Institutional Review Board's (IRB) guidelines and requirements regarding informed consent and participants' rights.

HBSE 4047: Record-Keeping and ABA (2 Credits)—optional course, required for NYS licensure in ABA

Description of Field Experience

Students rotate classroom placements across three or four semesters of internship consisting of full-time (approximately 35 hours per week across 40 weeks for 2 years) placement in CABAS® Teaching Schools and classrooms. Classroom teachers mentor students and supervisors who have achieved advanced repertoires (CABAS® rank of Teacher II or higher). Internship placements may include self-contained classrooms for students who need remedial instruction, inclusion classrooms that have the range of students, and classrooms for typically developing students across the age span from birth through early middle school. All of our classes contain children diagnosed with autism or related disorders. Concurrently, across four semesters students take **HBSE 4704**, the internship course in Teaching as Applied Behavior Analysis. The practica are coordinated with the requirements of **HBSE 4015, 4016, 4017, 4044, 4045, 4046, and 4049**. The coordination of efforts in these courses and the other courses listed above result in the attainment of criterion-referenced competencies documented in the modules associated with the CABAS® Board recognized Teacher Ranks (see below). Students must attain the competencies specified in the modules. Typically, students do their second year placement in our general education inclusion model AIL classrooms Pre-K-Grade 6.

CABAS® Criterion-referenced Competency Modules Found in The Above Courses to Synthesize Repertoires and Provide Continuing Education

Mastery of requirements in the above sequence of courses and modules from those courses typically results in the achievement of two CABAS® Board Recognized Teacher Ranks (Teacher I and II in the USA and the United Kingdom). The CABAS® Professional Ranks are:

Teacher I
Teacher II
Master Teacher
Assistant Behavior Analyst
Associate Behavior Analyst
Senior Behavior Analyst
Assistant Research Scientist
Associate Research Scientist
Senior Research Scientist

Programs in Applied Behavior Analysis
Teachers College, Columbia University • Department of Health & Behavior Studies
525 W. 120th Street, Box 223 • New York, NY 10027

The Behavior Analyst and Research Scientist Ranks are Post-MA and Post- Doctoral continuing education levels of expertise. The research scientist ranks are equivalent to

the research scientist ranks in research universities in the United States and recognize research publications and scientific leadership in behavior analysis and schooling.

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