# Herbert Arthur Chris Ninness, PhD Behavioral Software Systems <u>http://behavioralsoftwaresystems.com/</u>

Former Professor and Director: School & Behavioral Psychology Doctoral Program Stephen F. Austin State University

# Academic Degrees:

- Aug. 1994 Post-Doctorate: Behavioral Pediatrics The Johns Hopkins University School of Medicine and Kennedy Krieger Institute, Baltimore, MD
- Aug. 1982 Doctor of Philosophy, University of North Texas, Department of Education, Denton, TX
- DEC. 1978 Doctor of Philosophy, Texas Woman's University, Department of Psychology, DENTON, TX
- May 1974 Master of Science, University of North Texas, Department of Psychology, Denton, TX
- May 1972 Bachelor of Science, Cum Laude, University of North Texas, Department of Psychology, Denton, TX

## Work Experience:

- Jan. 1991 to August 2013: Director and Professor of School Psychology, Department of Human Services, Stephen F. Austin State University. Nacogdoches, TX
- Sept. 1993 to Aug. 1994: Post-Doctoral Fellow, Department of Behavioral Psychology. The Johns Hopkins University School of Medicine and The Kennedy Krieger Institute. 707 North Broadway, Baltimore, MD
- Sept. 1988 to May 1999: Consulting School Psychologist, Northwest Independent School District Special Education Departments. Justin and Denton, TX
- Aug. 1981 to May 1991: Supervising School Psychologist, Special Education Division of the Denton Independent School District Sullivan-Keller Instructional Center, 500 N. Wood St., Denton, TX
- May 1979 to Aug 1981: Senior Research Analyst, Applied Research Division of the Dallas Independent School District Dallas, TX

Doctoral Courses Taught at SFASU: School Psychology Program:

EPS 651 Multivariate and Artificial Neural Network Analyses

EPS 669 C# Computer Programming

EPS 650 Advanced Research Methods

EPS 690 Dissertation in School Psychology

EPS 655 Practicum in School Psychology

EPS 595 Internship in School Psychology

EPS 502 Applied Behavior Analysis

### Editorial Boards:

- Reviewer: Artificial Intelligence Review (Current)
- Associate Editor: Journal of Applied Behavior Analysis (2007-2010)
- Editorial Board: Behavior and Social Issues (Current)
- Associate Editor: The Psychological Record (2017-2018)

## Academic Awards:

- **Career Contributions to Behavior Analysis in Texas Award** (2021) Texas Association of Behavior Analysis
- **Foundation Professor** Faculty Achievement Award for Research (2004). Stephen F. Austin State University Foundation Board of Trustees
- **Teaching Excellence Award** (2003). Department of Human Services Stephen F. Austin State University

## Publications:

- Ninness, C., Yelick, A., Ninness, S. K. (2021). Predicting heuristic decisions in child welfare: A neural network exploration. *Behavior and Social Issues*. <u>https://rdcu.be/clPPD</u>
- Ninness, C. & Ninness, S. K. (2020). Emergent virtual analytics: Modeling contextual control of derived stimulus relations. *Behavior and Social Issues*, 29, 119–137. <u>https://rdcu.be/b5Tmd</u>
- Ninness, C. & Ninness, S. K. (2020). Emergent virtual analytics: Artificial intelligence and human-computer interactions. *Behavior and Social Issues*, 29, 100–118. <u>https://rdcu.be/b5Fil</u>
- Ninness, C., Rehfeldt, R. A. & Ninness, S. (2019). Identifying accurate and inaccurate stimulus relations: human and computer learning. *The Psychological Record*, 69, 333–356. <u>https://rdcu.be/bzzHB</u>
- Ninness, C., Ninness, S., Rumph, M. & Lawson, D. (2018). The emergence of stimulus relations: human and computer learning. *Perspectives on Behavioral Science*, 41, 121–154. Initially published online November 2017 in *The Behavior Analyst*. http://rdcu.be/yt28
- Halle, S., Ninne**ss**, C., Ninness, S., & Lawson, D. (2016). Teaching social skills to students with autism: a video modeling social stories approach. *Behavior and Social Issues*, 25, 42-63.
- Ninness, C., Henderson, R., Ninness, S., & Halle, S. (2015). Probability pyramiding revisited: univariate. multivariate, and neural network analyses of complex data. *Behavior and Social Issues*, 24, 164-186.

- O'Neill, J., Rehfeldt, R. A., Ninness, C., Muñoz, B. E., & Mellor, J. (2015). Comparison of a stimulus equivalence protocol and traditional study in learning Skinner's verbal operants. *The Analysis of Verbal Behavior*, 31, 255-266
- Ninness, C., Rumph, M., Clary, L., Lawson, D., Lacy, J. T., Halle, S., McAdams, R., Parker, S., & Forney, D. (2013). Neural network and multivariate analysis: Pattern recognition in academic and social research. *Behavior and Social Issues*, 22, 56-65.
- Rumph, R, Ninness, C., Lacy, J., Rumph, M., Halle, S., Clary, L, Law, S., McKee, K., Rinewalt, T. W., & Ninness, S. (2013). The automatic graphing/rotation scan procedure for laptops and cellphones: An ecological assessment system for developing local norms. *Behavior and Social Issues*, 22, 37-45.
- Ninness, C., Lauter, J., Clarey, L, Rumph, M., Coffee, M., Kelly, E., R., Kyle, B., & Ninness, S. (2012). Behavioral and biological neural network analyses: A common pathway toward pattern recognition. *The Psychological Record*, 62, 579-598.
- McGinty, J., Ninness, C., McCuller, G., Rumph, R., Goodwin, A., Lopez, A., & Kelly, E. (2012). Training and deriving precalculus relations: A small group web-interactive approach. *The Psychological Record*, 62, 225–242.
- Walker, B. D., Rehfeldt, R. A., & Ninness, C., (2010). Using the stimulus equivalence paradigm to teach course material in an undergraduate rehabilitation course. *Journal of Applied Behavior Analysis*, 43, 615-633
- Ninness, C., Dixon, M., Barnes-Holmes, D., Rehfeldt, R.A., Rumph, R., McCuller, G., Holland, J. Smith, R., & Ninness, S. (2009). Deriving and constructing reciprocal trigonometric relations: A web-interactive training approach. *Journal of Applied Behavior Analysis.*, 42, 191–208.
- Ward, T. A., Eastman, R. L., & Ninness, C. (2009). An experimental analysis of Cultural Materialism: The effects of various modes of production on resource sharing. *Behavior & Social Issues*, 18, 1-23.
- Davis, R., Ninness, C., Rumph, R., McCuller, G., Ward, T & Vasquez, E. (2008). Functional behavior assessment of self-initiated maladaptive behaviors: A case study. *Behavior and Social Issues*, 17, 66-85.
- Ninness, C., & Ninness, S. K. (2008). Commentary-- Gambling, problem-solving, and the contingencies of superstition: A response to Fantino & Stolarz-Fantino. *Analysis of Gambling Behaviors*, 2, 115-117.

- Rumph, R., Ninness, C., McCuller, G., Holland, J., Ward, T., & Willbourn, T. (2007). "The shame of American education" redux. *Behavior and Social Issues*, *16*, 27-41.
- Rumph, R., Ninness, C., McCuller, G., Holland, J., Ward, T., & Willbourn, T. (2007). Stimulus change: Reinforcer or punisher? Reply to Ellis and Hursh. *Behavior and Social Issues*, *16*, 47-49.
- Rumph, R., Ninness, C., McCuller, G., Holland, J., Ward, T., & Willbourn, T. (2007). Stimulus change: Reinforcer or punisher? Reply to Ellis and McGee. *Behavior and Social Issues*, 16, 50-58.
- Ninness, C., Barnes-Holmes, D., Rumph, R., McCuller, G., Ford, A., Payne, R., Ninness, S., Smith, R., Ward, T., & Elliott, M. (2006). Transformation of mathematical and stimulus functions. *Journal of Applied Behavior Analysis*, 39, 299-321.
- Rumph, R., Ninness, C., McCuller, G., & Ninness, S. (2005). Twenty years later, Commentary on Skinner's "Why we are not acting to save the world?", *Behavior and Social Issues*, 14, 1-6.
- Ninness, C., Rumph, R., McCuller, G., Harrison, C., Ford, A., & Ninness, S. (2005). A functional analytic approach to computer-interactive mathematics. *Journal of Applied Behavior Analysis*, 38, 1-22.
- Ninness, C. Rumph, R., McCuller, G., Harrison, C., Vasquez, E., Ford, A., Ninness, S., & Bradfield, A. (2005). A relational frame and artificial neural network approach to computer-interactive mathematics. *The Psychological Record*, 55, 561-570.
- Jones, T. B., Sherman, R. B., Ninness, C., & Hallman, P. (2005). The relationship between GRE scores and performance on the Texas Standard Principal Examination for the certification of educators in Texas. *Educational Leadership Review*, *6*, 26-3.1
- Ninness, C., Newton, R., Saxon, J., Rumph, R., Bradfield, A., Harrison, C., Vasquez, E., & Ninness, S. (2002). Small group statistics: A Monte Carlo comparison of parametric and randomization tests. *Behavior and Social Issues*, *12*, 53-63.
- Ninness, C., Rumph, R., Vasquez, E., & Bradfield, A., (2002). Multivariate randomization tests for small-n behavioral research. *Behavior and Social Issues*, 12, 64-74.
- Kenney, M., Ninness, C., Rumph, R., Bradfield, A. & Cost, H. (2002). Paradoxical patterns in the measurement of hyperactivity. *Behavior and Social Issues*, 12, 40-52.
- Ninness, C., Rumph, R., McCuller, G., Bradfield, A., Saxon, J., Calliou, M., & Ninness, S. K. (2001). The effect of computer emitted speech inflections during verbal-Interactive responding. *The Psychological Record*, *51*, 561-570.

- Rumph, R. & Ninness, C. (2001). The promise of the design of culture. *Behavior and Social Issues*, 11, 23-25.
- Ninness, C., Ozenne, L., McCuller, G., Rumph, R., & Ninness, S.K. (2000). Fixed-interval responding during computer-interactive problem solving. *The Psychological Record*, 50, 387-401.
- Ninness, C., Shore, T., & Ninness, S. K. (1999). Shaping verses instructing verbal rules during computer-interactive problems solving. *The Psychological Record*, 49, 629-644.
- Ninness, C. & Ninness, S. K. (1999) Contingencies of superstition: fallacious rules and irrelevant responding during second-order schedules of reinforcement. *The Psychological Record*, 49, 221-243.
- Ninness, C., Ellis, J., & Ninness, S. K. (1999). Self-assessment as a reinforcer during computer interactive math performance: An experimental analysis. *Behavior Modification*, 23, 403-418.
- Ninness, C., & Ninness, S. K. (1998). Superstitious math performance: Interactions between rule-governed and scheduled contingencies. *The Psychological Record*, 48, 45-62.
- Ninness, C., Ninness, S. K., Sherman, S., & Schotta C. (1998). Augmenting computer interactive self-assessment with and without feedback. *The Psychological Record*, *48*, 601-616.
- Fisher, W. W., Ninness, C., Owen, J., & Piazza, C. (1996). On the reinforcing effects of the content of verbal behavior. *Journal of Applied Behavior Analysis*, 29, 235-238.
- Ninness, C., Fuerst, J., & Rutherford, R. (1995). A descriptive analysis disruptive behavior during pre- and post-unsupervised self-management by students with SED: A within study replication. *Journal of Emotional and Behavioral Disorders*, *3*, 230-240.
- Ninness, C., Ellis, J., Miller, B., Baker, D., & Rutherford, R. (1995). The effects of selfmanagement on the transfer of aggression replacement skills in the absence of supervision. *Behavior Modification*, *19*, 464-490.
- Ninness, C., Richman, G., Jaquess, D., & Vittemberga, G. (1995). Facilitating objectivesetting in behavior therapy through social mediation. *Behavior and Social Issues*, *5*, 13-19.

- Ninness, C., Roberts, J., Krell, D., & Richman, G. (1994). Electronic distribution of behavior analytic publications. *Behavior and Social Issues*, *4*, 97-99.
- Ninness, C., Fuerst, J., Rutherford, R., & Glenn, S. (1991). The effects of self-management training and reinforcement on the transfer of improved conduct in the absence of supervision. *Journal of Applied Behavior Analysis*, 24, 499-508.
- Ninness, C. (1985). The effects of contingency management strategies on Bender Gestalt indicators of emotionally disturbed children. *Child Study Journal*, *15*, 13-28.
- Ninness, C. (1983). Modification of an electronic tactile signaling apparatus to produce audio cues for monitoring classroom behavior. *Behavioral Engineering*, *9*, 21-26.
- Ninness, C. (1982).Two and one-half year follow-up on the effects of elimination of subvocalization with electromyographic feedback. *Behavioral Engineering*, *8*, 5-10.
- Ninness, C. (1981). An electronic tactile signaling apparatus for sampling covert verbal behavior. *Behavioral Engineering*, *7*, 57-61.
- Ninness, C. (1980). The effects of elimination of subvocalization with electromyographic feedback. *Behavioral Engineering*, *6*, 77-90.

### Books:

- Ninness, C., McCuller G., & Ozenne, L. (2000). School & Behavioral Psychology: Research in Human-Computer Interactions, Functional Assessment and Data-Based Treatment. Norwell, MA: Kluwer Academic Publishers.
- Ninness, C., Glenn, S., & Ellis, J. (1993). *Assessment and Treatment of Emotional or Behavioral Disorders*. Westport, CT: Greenwood Press.
- Ninness, C. & Glenn, S. (1988). *Applied Behavior Analysis and School Psychology: A Research Guide to Principles and Procedures*. Westport, CT: Greenwood Press.

### Chapters in Edited Books:

- Ninness, C., Holland, J., Rumph, R., McCuller, G., Ninness, S., & Dixon, M. (2009). Problem-solving and derived mathematical relations. In R. A. Rehfeldt & Y. Barnes-Holmes (Eds.), *Derived relational responding: Applications for learners with autism and other developmental disabilities*. New Harbinger and Context Press.
- Ninness, C., McCuller, G., & Ninness, S. K. (1999). Functional analysis utilizing a four term contingency. In D. A. Sabatino & B. L. Brooks (Eds.) *Contemporary interdisciplinary interventions for children with emotional/behavioral disorders* (pp. 505-531). Durham, NC

#### Data Based Publications in State Refereed Journals:

- Brister, F. & Ninness, C. (1997). An examination of the ever changing criteria for hearing screening in Texas. *Texas Journal of Audiology and Speech Pathology*, 22, 48-50.
- Brister, F., McKaig,. & Ninness, C. (2001). Age as a factor in hearing screening in the schools. *Texas Journal of Audiology and Speech Pathology*.

### Non-refereed Publication:

Ninness, C., Rumph, R., Bradfield, A. (2001). Small group statistics for school psychologists: On-line randomization and permutation tests. *The Texas School Psychologist*.

### Presentations: National:

- Ninness, C. (Oct. 8, 2020), Predicting Heuristic Decisions in Child Welfare: A Neural Network Exploration Invited Online Presentation at the Annual Association for Behavior Analysis International Conference, <u>ABAI\_New Orleans October 8, 2020</u>
- Lacy, J. T., Sarah A. Law, Ninness, C., Halle, S., Rumph, M., Rumph, R., McKee, K., & Lawson, D. (2012, May), *Automatic graphing on laptops and smartphones*. Paper presented at the Annual Association for Behavior Analysis International Conference, Minneapolis, MN.
- Ninness, C., Lauter, J., Coffee, M., Clarey, L., Kelly, E., Rumph. M., Rumph, R., & Ninness, S. (2012, May). *Behavioral and biological neural network analyses: A common pathway toward pattern recognition and prediction*. Paper presented at the Annual Association for Behavior Analysis International Conference, Seattle, WA.
- Ninness, C., Kelso, G. L., Barnes-Homes. D., Rumph, R., Steward, R., Kelly. E., Staley, J., & McCuller, G. L. (2011, May). *Been wrong so long it looks right to me: Training multivariate and neural network relations.* Paper presented at the Annual Association for Behavior Analysis International Conference, Denver, CO.
- Rumph, R., Kelly, E., Holland, J., Koltonski, S., Ninness, C., McCuller, G. L., Kelso, G. L., & Rumph, M. (2011, May). *No Child Left Behind ten years after: What do we know?* Paper presented at the Annual Association for Behavior Analysis International Conference, Denver, CO.
- Sauceda, E., Ninness, C., Rumph, R., McCuller, G., & Kietlinski, R., (2010, May). The effect of a social skills and self-management training on maladaptive behaviors and academic performance within a public school setting. Annual Association for Behavior Analysis International Conference, San Antonio, TX.

- Bradley, C., Rumph, R., McCuller, G., Walker, M., Ninness, C., Sauceda, E., Kelly, E., (2010, May). The effect of behavioral contingency management on mutritional and exercise related behaviors and weight loss. Annual Association for Behavior | Analysis International Conference, San Antonio, TX.
- Parrett, N., McCuller, G., Kelso, G., Ninne**ss, C**., Rumph, R., & Goodwin, A. (2010, May). Generating frames of causation in preschoolers. Annual Association for Behavior Analysis International Conference, San Antonio, TX.
- Kolonski, S., McCuller, G., Kelso, G., Rumph, R., Ninness, C., (2010, May). Using frames of comparison to generate good food choices. Annual Association for Behavior Analysis International Conference, San Antonio, TX.
- Ninness, C., Rumph, R., Dixon, M., McCuller, G., Ninness, S., & Holland, J (2007, May). Trigonometric, stimulus, and psychological relations: A web interactive approach. Annual Association for Behavior Analysis Conference, San Diego, CA.
- Ninness, C., Barnes-Holmes, D., Rumph, R., McCuller, G., Ford, A., Holland, J., & Ninness, S., (2006, May). Transformations of web-based trigonometric and stimulus functions: Accelerating the acquisition of derived complex mathematical relations. Annual Association for Behavior Analysis Conference, Atlanta, GA.
- Ninness, C., Rumph, R., McCuller, G., Ford, A., & Ninness, S. (2005, May). Transformation of mathematical and stimulus functions: The value of formula elegance. "Contributed Paper" presented at the International Association for Behavior Analysis Convention, Chicago, IL.
- Ninness, C., Rumph, R., McCuller, G., Harrison, C., Hancock-Akin, E., Ford, A., Capt, A. & Ninness, S. (2004, May). A functional-analytic and neural network approach to mathematical relations. "Contributed Paper" presented at the International Association for Behavior Analysis Convention, Boston, MA
- Rumph, R., Ninness, C., McCuller, G., Harrison, C., (2004, May) Twenty Years Later: Commentary on Skinner's "Why Are We Not Acting to Save the World." "Contributed Paper" presented at the International Association for Behavior Analysis Convention, Boston, MA.
- McCuller, G., Harrison, C. Ninness, C., Rumph, R., Creel, C. (2004, May) Using stimulus equivalence procedures to teach geographic relations. Poster session presented at the International Association for Behavior Analysis Convention, Boston, MA.

- Ninness, C., Rumph, R., McCuller, G., Bradfield, A., Harrison, C., Vasquez, E. & Ninness, S. (2003, May). Artificial neural network analysis of derived relational frames. Association for Behavior Analysis Annual Convention, San Francisco, CA.
- Ninness, C., Rumph, R., McCuller, G., Bradfield, A., Saxon, J. and Calliou, M., Newton, R., Ninness, S. K. (2001, May) Shaping verbal selections with voice-interactive software. Annual Convention of the Association for Behavior Analysis, New Orleans, LA.
- Rumph, R., Ninne**ss, C.**, McCuller, G. (2001, May). The case against the standardization of education. Annual Convention of the Association for Behavior Analysis, New Orleans, LA.
- Calliou, M., Saxon, J., Ninness, C., Rumph. R., & McCuller, G. (2001, May) The effects of using differential reinforcement of alternative behaviors (DRA) on Autistic Self-Stimulatory Behaviors. Annual Convention of the Association for Behavior Analysis, New Orleans, LA.
- Cook, A., McKaig, M., Ninness, C. & Brister, F. (2001, February) Assessment of phonological skills of Brazilian Portuguese speakers. Texas Research Symposium on Language Diversity, Austin, TX.
- Ninness, C. & Ninness, S. K. (1998, May). Schedule control of self-generated instructions. Association for Behavior Analysis International Convention, Orlando, FL.
- Ninness, C. & Ninness, S. K. (1996, May). Superstitious math performance: Interactions between rule-governed and direct-acting contingencies on three schedules of reinforcement. Association for Behavior Analysis International Convention, San Francisco, CA.
- Ninness, C. (1995, February). Functional assessment of behaviorally disordered and aggressive children. Texas Association of School Psychologists Conference, Austin, TX.
- Ninness, C., Fisher, W.W., & Owen, J. (1995, May). Noncontingent reinforcement procedures in relation to descriptive contingent attention. Association for Behavior Analysis International Convention, Washington, DC.
- Fisher, W. W., Piazza, C.C., Zarcone, J. R., O'Conner, J. & Ninness, C. (1995, May). On the clinical and theoretical implications of molar and molecular functional assessment. Association for Behavior Analysis International Convention, Washington, DC.

- Ninness, C., Richman, G. & Jacquess, D. (1994). The multiple effects of prescribing behavior objectives in documenting patient progress. Association for Advancement of Behavior Therapy. Annual AABT Community Special Interest Group.
- Ninness, C., Fuerst J., & Ninness, S. K. (1994, February). Functional assessment of emotional disturbance. Conference on Behavioral Disorders, Austin, TX.
- Ninness, C., Collyer, D. & Heflin, J. (1993, May). Transfer and maintenance of selfmanagement and aggression replacement skills by behaviorally disordered adolescents. Association for Behavior Analysis International Convention, Chicago.
- Ninness, C. & Fuerst J. (1991, February). Physical aggression, disruption, and anger in the SED student. Conference on Behavioral Disorders, Austin, TX.
- Ninness, C. (1991, March). Self-management of aggression replacement in SED students. National Association of School Psychologists Conference, Dallas, TX.
- Ninness, C. (1991, May). Physical aggression, disruption, and anger in the SED student. Association for Behavior Analysis Convention, Atlanta, GA.
- Ninness, C. & Fuerst J. Applied behavioral analysis and the SED atudent. (1990, November). Texas Association for Children/Adults with Learning Disabilities Conference, Dallas, TX.
- Ninness, C. & Fuerst J. (1990, April). Aggression replacement for SED students Texas Psychological Association, Corpus Christi, TX.
- Ninness, C. & Fuerst J. (1990, July). Aggression replacement and self-management for SED students. Texas Council for Exceptional Children, Dallas, TX.
- Ninness, C. (1989, May). Teaching self-management to seriously emotionally disturbed adolescents. Association of Behavior Analysis Convention, Milwaukee, WC.
- Ninness, C. (1988, May). A training package for improving generalization of social/affective behaviors of behaviorally disordered students. Association for Behavior Analysis Convention, Philadelphia, PA

### Presentations: State and Regional

Ninness, C., Rumph, R., McCuller, G., Ford, A., Payne, R., Ninness, S., Smith, R., Ward, T., & Elliott, M. (2006, March). Transformation of mathematical and stimulus functions. Texas Association for Behavior Analysis Regional Conference, Houston.

- Ninness, C. & Fuerst J. (1989, February). Teaching self-management to seriously emotionally disturbed adolescents. Conference on Behavior Disorders, Austin, TX.
- Ninness, C. & Fuerst J. (1988, February and 1987, October). A training package for improving generalization of social/affective behaviors of behaviorally disordered students, Behavior Disorders Conference and Texas Association for Children and Adults with Learning Disabilities Conference, Austin, TX.

#### Grants

- Ninness, C. & Coffee, M. (2010) Artificial Neural Network Analysis of Complex Human Behaviors. Supported by SFA Research Development and a State of Texas Research Excellence Award
- Ninness, C. & Coffee, M. (2006-2009) *psychStats* Online: A Computer-Interactive Applied Research System. Online statistics providing results for multivariate, univariate, nonparametric, and permutation tests. Supported by a State of Texas Research Excellence Award

Downloadable neural network and related software available to interested researchers: See Behavioral Software Systems http://behavioralsoftwaresystems.com/

Emergent Virtual Analytics EVA 3.0 (2021) See Ninness, C., Yelick, A., Ninness, S. K. (2021). Predicting heuristic decisions in child welfare: A neural network exploration. *Behavior and Social Issues <u>https://rdcu.be/clPPD</u>* 

> Emergent Virtual Analytics 2.65 (EVA 2.65) See Ninness, C. & Ninness, S. K. (2020). Emergent virtual analytics: Modeling contextual control of derived stimulus relations. *Behavior and Social Issues.* <u>https://rdcu.be/b5Tmd</u>

Emergent Virtual Analytics 2.50 (EVA 2.50) See Ninness, C., Rehfeldt, R. A. & Ninness, S. (2019) Identifying accurate and inaccurate stimulus relations: human and computer learning. *The Psychological Record* <u>https://rdcu.be/bzzHB</u>

Emergent Virtual Analytics (EVA) See Ninness, C., Ninness, S., Rumph, M. & Lawson, D. (2018). The emergence of stimulus relations: human and computer learning. *Perspectives on Behavioral Science*, 41, 121–154. <u>http://rdcu.be/yt28</u> Kohonen SOM Neural Network Application See Ninness, C., Lauter, J. Coffee, M., Clary, L., Kelly, E., Rumph, M., Rumph, R., Kyle, R., & Ninness, S. (2012). Behavioral and biological neural network analyses. *The Psychological Record*, 62, 579-598

Rotation Scan Auto Graf Application Software System See Rumph, R, Ninness, C., Lacy, J., Rumph, M., Halle, S., Clary, L., Law, S., McKee, K., Rinewalt, T. W., & Ninness, S. (2013).

The automatic graphing/rotation scan procedure for laptops and cellphones: An ecological assessment system for developing local norms. *Behavior and Social Issues*, 22, 37-45.