

TIMOTHY DAVID HACKENBERG
Curriculum Vitae
May 2021

GENERAL INFORMATION

Business Address: Psychology Department
Reed College
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Portland, OR 97202

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Portland, OR 97215

EDUCATION

Ph.D., Psychology, Temple University, Philadelphia, PA, 1987.
B.A. (Summa Cum Laude), University of California, Irvine, 1982.

PROFESSIONAL APPOINTMENTS

Professor, Department of Psychology, Reed College, 2009-present.
Professor, Department of Psychology, University of Florida, 2002-2009.
Associate Professor, Department of Psychology, University of Florida, 1995-2002.
Assistant Professor, Department of Psychology, University of Florida, 1990-1995.
Associate Member, Center for Neurobiological Sciences, University of Florida, 1991-2009.
Postdoctoral Research Fellow, University of Minnesota, 1988-1990.
Research Affiliate, Center for Research in Learning, Perception, & Cognition, University of Minnesota, 1988-1990.

HONORS AND AWARDS

Distinguished Contributions to Basic Research Award, Division 25 (Behavior Analysis), American Psychological Association, 2010.
Fellow, Association for Behavior Analysis International, elected 2011.
Fellow, Division 25 (Behavior Analysis), American Psychological Association, elected 2002.
Teaching Incentive Program Awardee, University of Florida, 1994.
Marianthi Geougourdi Annual Dissertation Award (awarded to the dissertation with the greatest theoretical/philosophical content), Temple University, 1988.

FELLOWSHIPS

Postdoctoral Research Fellow, Individual National Research Service Award, University of Minnesota, 1989-1990.
Postdoctoral Trainee, National Institute of Drug Abuse (NIDA), University of Minnesota, 1988-1989; Travis Thompson, Ph.D., Director.
University Summer Graduate Research Fellowship, Temple University, 1983-1986.
Dean's Undergraduate Research Fellowship, University of California, Fall 1981.

GRANT SUPPORT

External

National Institute on Drug Abuse (NIDA), 2020-2023: “An Animal Model of Gambling in a Laboratory-Based Token Economy.” T. Hackenberg (Principal Investigator). \$465,339.

National Institute on Drug Abuse (NIDA), 2010-2015: “Behavioral Economics in a Laboratory-Based Token Economy.” T. Hackenberg (Principal Investigator). \$1,112,669.

National Science Foundation, 2004-2008: “Cross-Species Analysis of Adaptive Choice.” T. Hackenberg (Principal Investigator), J. Dallery (Co-Investigator), \$261,159.

National Science Foundation, 2000-2004: “Quantification of Species Differences in Adaptive Choice.” T. Hackenberg (Principal Investigator), \$209,780.

National Institute of Mental Health, 1994-1997: “Species Differences in Choice and Self-Control.” T. Hackenberg (Principal Investigator), \$266,475.

National Institute of Child Health & Human Development, 1991-1994: “Behavioral and Opioid Mechanisms in Self-Injury,” T. Thompson (Principal Investigator), T. Hackenberg, (Co-Investigator).

National Research Service Award Postdoctoral Fellowship, National Institute of Child Health & Human Development (NICHD), 1989-1990: “Human Optimal Performance: Effects of Instructions on Self-Control.” T. Hackenberg (Principal Investigator), T. Thompson (Sponsor), \$24,996.

Program Development Project, Minnesota Center for Research in Developmental Disabilities, National Institute of Child Health & Human Development, 1989-1990: “Opioid Antagonist Effects on Learning and Self-Injury by Persons with Retardation.” T. Thompson (Principal Investigator), T. Hackenberg (Co-Investigator), \$13,807.

Predoctoral Fellowships Sponsored

National Research Service Award (NRSA) Predoctoral Fellowship, National Institute of Mental Health, 2008-2010: “The Economics of Risky Choice: Toward an Animal Model of Gambling.” C. Lagorio (Principal Investigator), T. Hackenberg (Sponsor), \$57,000.

NRSA Predoctoral Fellowship, National Institute of Mental Health, 2002-2004: “Effects of Response Effort and Reinforcer Delay on Behavior.” T. Foster (Principal Investigator), T. Hackenberg (Sponsor), \$53,942.

NRSA Predoctoral Fellowship, National Institute of Mental Health, 1998-2000: “Human Choice in Situations of Uncertainty and Risk.” C. Pietras (Principal Investigator), T. Hackenberg (Sponsor), \$34,380.

NRSA Predoctoral Fellowship, National Institute of Mental Health, 1997-1999: “Do Equivalence Relations Mediate Transfer of Function?” M. Vaidya (Principal Investigator), T. Hackenberg (Sponsor), \$32,750.

Internal

Esther Wender Summer Research Fellowship (in collaboration with Cyrus Kirkman), Reed College, 2020.

Sabbatical Fellowship, Reed College, 2019-20.

Esther Wender Summer Research Fellowship (in collaboration with James Glass), Reed College, 2019.

Esther Wender Summer Research Fellowship (in collaboration with Katie Garland), Reed College, 2018.

Summer Research Fellowship (in collaboration with Katelyn Gutowsky), Reed College, 2018.

Summer Research Fellowship (in collaboration with Lydia Ludyshyna), Reed College, 2016.

Summer Research Fellowship (in collaboration with Emma Schweitzer), Reed College, 2015.

Summer Research Fellowship (in collaboration with Molly Jackson-Nielsen), Reed College, 2014.

Sabbatical Fellowship, Reed College, 2012-13.

Division of Sponsored Research, University of Florida, Graduate Research Assistantship Award, 1993-94: “Environmental and Opioid Mechanisms in Self-Injury,” \$6,349.

Division of Sponsored Research, University of Florida, Research Development Award, 1992-93: “Environmental and Opioid Mechanisms in Self-Injury,” \$20,000.

Division of Sponsored Research, University of Florida, Research Development Award, 1991-1992: “Species Differences in Choice and Adaptive Performance,” \$14,000.

Division of Sponsored Research, University of Florida, Research Support Program for New Faculty, 1990-1991: "Decision Making in Humans and Animals," \$9,992.
School of Social Science Undergraduate Research Grant, University of California, Fall 1981.

PROFESSIONAL EXPERIENCE

Associate Editor, *Frontiers in Psychology, Comparative Psychology Section*, 2021-present.
Editorial Board, *Perspectives on Behavior Science*, 2018-2020.
Guest Editor, Special Issue on Behavioral Economics, *Journal of the Experimental Analysis of Behavior*, January 2013.
Associate Editor, *Handbook of Behavior Analysis*, APA Books, 2012.
Associate Editor, *Journal of the Experimental Analysis of Behavior*, 1997-2000.
Guest Co-Editor, Special Issue of *Behavioral Processes* (Proceedings of the Society for the Quantitative Analysis of Behavior Meeting), 2003-2004.
Editor, *Division 25 Recorder*, Division 25, American Psychological Association, 1996-1998.
Editorial Board, *Journal of the Experimental Analysis of Behavior*, 1988-1991, 1992-1995, 1996-1997, 2002-2005, 2007-2010, 2011-present.
Editorial Board, *The Behavior Analyst*, 1993-1995, 2003-2005, 2007-2010
Editorial Board, *Brazilian Journal of Behavior Analysis*, 2008-2012.
Editorial Board, *Experimental Analysis of Human Behavior Bulletin*, 1995-1998, 2001-2005.

Guest Reviewer for *Psychonomic Bulletin & Review*, *Journal of Experimental Psychology: Animal Behavior Processes*, *Journal of Behavioral Decision Making*, *Journal of Experimental Psychology: Animal Behavior & Cognition*, *Behavior and Philosophy*, *Journal of Applied Behavior Analysis*, *Behavioural Processes*, *Learning and Motivation*, *Learning and Behavior*, *Animal Cognition*, *Psychological Record*, *American Psychologist*, *Current Directions in Psychological Science*, *Perspectives in Psychological Science*, *Mental Retardation and Developmental Disabilities Research Reviews*, *The Behavior Analyst*, *Perspectives in Behavior Science*, *Mexican Journal of Behavior Analysis*.

Ad Hoc Reviewer for National Science Foundation, National Institutes of Mental Health.

PROFESSIONAL AFFILIATIONS AND SERVICE

Affiliations

Association for Behavior Analysis, Member
Society for the Quantitative Analysis of Behavior, Member

Service

Association for Behavior Analysis International, Science Board Conference on Behavioral Economics, Program Chair, 2011.
Association for Behavior Analysis International, Science Board Director, 2008-2011.
Federation of the Behavioral, Psychological, & Cognitive Societies, Council Representative, 2008-2011.
Association for Behavior Analysis, Executive Council, Experimental Representative, 2006-2008.
Division 25, American Psychological Association, President, 2005-2006.
Society for the Experimental Analysis of Behavior, Board of Directors, 1998-2006, 2013-present.
Society for the Quantitative Analysis of Behavior, Board of Directors, 2001-2006.
Southeastern Association for Behavior Analysis, President, 1994-1995.
Southeastern Association for Behavior Analysis, Board of Directors, 1995-1998.
Southeastern Association for Behavior Analysis, Conference Program Chair, 1992.
Cambridge Center for Behavioral Studies, Advisory Board, 1995-2000.
Association for Behavior Analysis, Graduate Training Program Accreditation Review, Queens College (CUNY) Learning Processes Program, Chair, 2002.
Oregon Tech Program Review and Site Visit, 2017.

External Tenure Review: University of Kansas, Utah State University, West Virginia University, State University of New York, Brockport, University of North Texas, University of Maryland, Baltimore County, Illinois State University, Pacific University, Centenary College, Whitman College, University of Massachusetts, Lowell

DEPARTMENT AND COLLEGE SERVICE

Reed College

Psychology Department Chair, 2020-present.
Institutional Animal Care and Use Committee, Chair, 2013-19, 2020-present.
Institutional Review Board, Member, 2009-2011, 2013-2014, 2018-19.
Institutional Review Board, Co-chair, 2015-18.
Drug & Alcohol Committee, 2010-2012.
Student Success Working Group, 2014-15.

University of Florida

Merit Committee, Psychology Department, 1994-96, 1999-00, 2005-06.
Teaching Incentive Program Committee, Psychology Department, 1995.
Faculty Development Award Review Committee, Division of Sponsored Research, 1995.
Research Development Award Review Committee, College of Liberal Arts & Sciences, 2000, 2001.
Cognitive Area Search Committee, Psychology Department, 1995-96.
Behavior Analysis Area Search Committee, Psychology Department, 1997-98, 2000-01.
Behavior Analysis Area Search Committee, Chair, Psychology Department, 1998-99, 1999-00.
Library Committee, Psychology Department, 1992-2001.
Building Committee, Chair, Psychology Department, 1994-2001.
Undergraduate Studies Committee, Psychology Department, 1996-2001.
Space Committee, Psychology Department, 1997-2001.
Space Committee, Chair, Psychology Department, 2001-2007.
UF Research Foundation Professorship Review Committee, 2000.
Executive Committee, Psychology Department, 2001-2007.
Policy & Planning Committee, Psychology Department, 2001-2007.

TEACHING EXPERIENCE

Undergraduate

Psychology as a Natural Science (Temple University)
Laboratory in Learning and Conditioning (Temple University)
Analysis of Complex Behavior (University of Minnesota)
Psychology in Daily Life (University of Minnesota)
Principles of Behavior Analysis (University of Florida)
Laboratory Procedures in the Experimental Analysis of Behavior (University of Florida)
Behaviorism and Contemporary Society (University of Florida)
Comparative Cognition (Reed College)
Learning (Reed College)
Introductory Psychology (Reed College)
Research in Learning & Comparative Psychology (Reed College)
History & Systems of Psychology (Reed College)
Behavioral Economics (Reed College)
Judgment and Decision Making (Reed College)

Graduate

Behavior Analysis as an Unconventional Worldview (University of Minnesota)
The Nature of Human Nature (University of Florida)
Survey of Behavior Analysis (University of Florida)
Theoretical Foundations of Behavior Analysis (University of Florida)

Verbal Behavior (University of Florida)
Interpretive Systems (University of Florida)

THESES AND DISSERTATIONS SUPERVISED

Dissertations (University of Florida)

- Kevin Jackson (Ph.D., 1993). Token reinforcement, choice, and self-control in pigeons. (E. F. Malagodi, Co-Chair)
- Eric Jacobs (Ph.D., 1997). Human performance on negative-slope schedules of reinforcement: A test of maximization theory.
- Manish Vaidya (Ph.D., 1999). Do equivalence classes mediate transfer of function?
- Cynthia Pietras (Ph.D., 2000). Variables influencing risk sensitivity in adult humans. (Won Outstanding Dissertation Award, Division 25, American Psychological Association, 2000).
- Rafael Bejarano (Ph.D., 2001). Effects on chained-schedule performance of response-contingent variations in the probability of stimulus change.
- Theresa Foster (Ph.D., 2004). Effects of response effort and reinforcer delay on behavior.
- Christopher Bullock (Ph.D., 2006). Stimulus functions in token reinforcement schedules.
- Anthony DeFulio (Ph.D., 2007). Response-independent conditioned reinforcement in an observing procedure.
- Rachelle Yankelevitz (Ph.D., 2009). Some effects of economic context on pigeons' choices in situations of diminishing returns.
- Carla Lagorio (Ph.D., 2010). Risky choice in pigeons: A parametric analysis of preference for fixed and variable amounts in a token reinforcement paradigm.
- Leonardo deAndrade (Ph.D., 2010). Cross-species analysis of choices between reinforcer sequences.
- Anne Macaskill (Ph.D., 2011). Sunk-cost effects in pigeons.

Masters Theses (University of Florida)

- Eric Jacobs (M.S., 1994). Humans' choices in situations of diminishing returns: Effects of fixed-interval duration and progressive-interval step size.
- Cynthia Pietras (M.S., 1997). Timeout postponement without timeout-density reduction.
- Rafael Bejarano (M.S., 1998). Humans' choices in situations of time-based diminishing returns: Effects of subjects' descriptions of the schedule requirements.
- Theresa Foster (M.S., 2000). Second-order schedules of token reinforcement in pigeons: Exchange-schedule effects.
- Christopher Bullock (M.S., 2002). Second-order schedules of token reinforcement: The combined effects of production and exchange schedules.
- Rachelle Yankelevitz (M.S., 2006). Reinforcer accumulation in a token-reinforcement context.
- Carla Lagorio (M.S., 2009). Cross-species analysis of risky choice.

Undergraduate Theses (Reed College)

- Jessica Dennis (B.A., 2010). Metacognition in rats
- Brian Hilbert (B.A., 2010). Rats' choices in situations of diminishing returns: Effects of motivation and switching costs.
- Evin Luehrs (B.A., 2010). Testosterone and estradiol in male cynomolgus monkeys self-administering ethanol.
- Ruby Larisch (B.A., 2010). Free Bird: Testing a foraging analogue in the operant laboratory.
- Bradley Blickenstaff (B.A., 2011). Multimodal numerical cognition in pigeons.
- Henry Cooney (B.A., 2011). The role of the TRPV1 receptor in endocannabinoid enhancement of emotional memory. (P. Currie, Co-Chair)
- Sarah Jacoby (B.A., 2011). Ghrelin-induced improved memory performance is dopamine-dependent. (P. Currie, Co-Chair)
- Jason Leonard (B.A., 2011). Discovering the key to unlocking tool-use in a non-tool-using species.

Nicholas Jon Kappeyne van de Coppello (B.A., 2011). Metacognition in rats: Self-awareness during self-report and escape.

Daniel Fennelly (B.A., 2012). Functional heterogeneity in the dorsal striatum. (P. Currie, Co-Chair)

Claudia Realegeno (B.A., 2012). Better living through chemistry: Modafinil as a pharmacotherapy for neuropsychological recovery from methamphetamine dependence.

Dawniris Eversz (B.A., 2012). Sunk cost in pigeons: Investigation of preferences for options with higher time investment.

Eric Talbot (B.A., 2012). Group and individual behavior in a social foraging paradigm: Sensitivity to changes in resource ratios.

Frank Sosa (B.A., 2013). A method for examining the generality of risky choice and loss aversion throughout the animal kingdom.

Lisa Hiura (B.A., 2014). To free, or not to free: The relative reinforcing values of food reward versus social contact in rats.

Antonia Scarcello (B.A., 2014). Social and emphatic nudges: An evaluation of two intervention strategies to influence handwashing behavior.

James Shelstead (B.A., 2014). Interspecies behavioral biases and the conceptual components of cross-linguistic syntactic patterns. (E. Canseco-Gonzalez, Co-Chair)

Marisol Lauffer (B.A., 2015). Developing an animal model of the *Balloon Analogue Risk Task* (BART).

Cloe Moctezuma (B.A., 2015). Central amygdala endocannabinoid neurotransmission alters emotional memory processes in female rats. (P. Currie, Co-Chair)

Ileana Morales (B.A., 2015). Differential involvement of dopamine and opioid signaling in food preference and effort-related decision-making in rats. (R. Pastor-Medall, Co-Chair)

Brice Ponteri (B.A., 2015). Studying social motivation using the valproic acid animal model of autism in rats.

L.B. Miller (B.A., 2016). The utility of distraction: Alternative response options for pigeons in a self-control paradigm.

Emma Schweitzer (B.A., 2016). The effects of oxytocin in mediating social behavior and the value of social reward in female rats. (S. Renn, Co-Chair)

Lauren Vanderhooft (B.A., 2016). Resource exploitation in a modified public goods foraging game with rats.

Maddy Wagar (B.A., 2016). The role of choice and novelty in social preference and decision-making in rats.

Jasmine Huang (B.A., 2017). Pavlovian conditioning without awareness: An electrophysiological investigation. (M. Pitts, Co-Chair)

Shirin Porkar-Aghdam (B.A., 2017). Demand and consumption in a generalized token economy with pigeons.

Marc Feinstein (B.A., 2017). Meditating on impulsivity: An attempt to use mindfulness to influence rate of delay discounting. (C. Franceschini, Co-Chair)

Nicholas Zimmer (B.A., 2017). How does imitation promote pro-sociality? The effects of contingency and similarity on pro-social behavior using natural and artificial stimuli. (C. Franceschini, Co-Chair)

Katherine Garland (B.A., 2018). Social Enrichment Effect on Demand and Preference for Certain and Uncertain Rewards.

Rachel Schulingkamp (B.A., 2018). No New Friends? An Economic Analysis Comparing the Value of Familiar and Unfamiliar Interactions in Rats. (J. Rork, Co-Chair)

Nicole Kahn (B.A., 2018). Collicular Hyperstimulation Disrupts Control of Attention and Impulsivity: A Novel Model of ADHD. (P. Currie, Co-Chair)

Anders Pearson (B.A., 2018). No Light: A Comparative Study of First-Time and Experienced Float Tank Users.

James Glass (B.A., 2019). Demand and Preference for Specific and Generalized Reinforcers in Pigeons: Does Economic Context Matter?

- Arek Rein Jungwirth (B.A., 2019). Microbiome, metabolism, and memory consolidation in the social transmission of food preferences.
- Lydia Antonivna Lutsyshyna (B.A., 2019). An Interdisciplinary Approach to Psychedelic Therapy.
- Katelyn Gutowsky (B.A., 2019). Impact of Social Enrichment on A Valproic Acid Model of Autism Spectrum Disorder.

PUBLICATIONS

Books

- Madden, G. J., Hackenberg, T. D. & Lattal, K. A. (2012). *Handbook of Behavior Analysis (Vol. 1). Methods and Principles*. Washington DC: APA Books.

Peer-reviewed papers

- Hackenberg, T. D. (1987). When we speak of integrating. . . *The Behavior Analyst*, 10, 113-116.
- Hackenberg, T. D. & Hineline, P. N. (1987). Remote effects of aversive contingencies: Disruption of appetitive behavior by adjacent avoidance sessions. *Journal of the Experimental Analysis of Behavior*, 48, 161-173.
- Hackenberg, T. D. (1988). Operationism, mechanism, and psychological reality: The second-coming of linguistic relativity. *The Psychological Record*, 38, 187-201.
- Thompson, T., Hackenberg, T. D., & Schaal, D. W. (1991). Pharmacological treatments for behavior problems in developmental disabilities. In D. B. Gray (Ed.), *Treatment of destructive behavior in persons with developmental disabilities*. National Institute of Child Health and Human Development, NIH Publication No. 91-2410.
- Hackenberg, T. D. & Hineline, P. N. (1992). Choice in situations of time-based diminishing returns: Immediate versus delayed consequences of action. *Journal of the Experimental Analysis of Behavior*, 57, 67-80.
- Hackenberg, T. D. (1992). Conjoint schedules of timeout-deletion in pigeons. *Journal of the Experimental Analysis of Behavior*, 58, 349-360.
- Hackenberg, T. D. & Axtell, S. A. M. (1993). Humans' choices in situations of time-based diminishing returns. *Journal of the Experimental Analysis of Behavior*, 59, 445-470.
- Thompson, T., Hackenberg, T. D., Cerutti, D., Baker, D., & Axtell, S. (1994). Opioid antagonist effects on self-injury in adults with mental retardation: Response form and location as determinants of medication effects. *American Journal on Mental Retardation*, 99, 85-102.
- Schaal, D. W., & Hackenberg, T. D. (1994). Toward a functional analysis of drug treatments for behavior problems in people with developmental disabilities. *American Journal on Mental Retardation*, 99, 123-140.
- Hackenberg, T. D., & Joker, V. R. (1994). Instructional versus schedule control of humans' choices in situations of diminishing returns. *Journal of the Experimental Analysis of Behavior*, 62, 367-383.
- Hackenberg, T. D. (1995). Jacques Loeb, B. F. Skinner, and the legacy of prediction and control. *The Behavior Analyst*, 18, 225-236.
- Jacobs, E. A., & Hackenberg, T. D. (1996). Humans' choices in situations of time-based diminishing returns: Effects of fixed-interval duration and progressive-interval step size. *Journal of the Experimental Analysis of Behavior*, 65, 5-19.
- Jackson, K., & Hackenberg, T. D. (1996). Token reinforcement, choice, and self-control in pigeons. *Journal of the Experimental Analysis of Behavior*, 66, 29-49.
- St. John, S. J., Markison, S., Guagliardo, N. A., Hackenberg, T. D., & Spector, A. C. (1997). Chorda tympani transection and selective desalivation differentially disrupt two-lever salt discrimination performance in rats. *Behavioral Neuroscience*, 111, 450-459.
- Branch, M. N., & Hackenberg, T. D. (1998). Humans are animals, too: Connecting animal research to human behavior and cognition. In W. O'Donohue (Ed.), *Learning and behavior therapy* (pp. 15-35). Boston: Allyn-Bacon.

- Hackenberg, T. D. (1998). Laboratory methods in human behavioral ecology. In K. A. Lattal & M. Perone (Eds.), *Handbook of research methods in human operant behavior* (pp. 541-577). New York: Plenum.
- Hackenberg, T. D., & Pietras, C. J. (2000). Video access as a reinforcer in a self-control paradigm: A method and some data. *Experimental Analysis of Human Behavior Bulletin*, 18, 1-5.
- Jacobs, E. A., & Hackenberg, T. D. (2000). Human performance on negative-slope schedules of points exchangeable for money: A failure of molar maximization. *Journal of the Experimental Analysis of Behavior*, 73, 241-260.
- Pietras, C. J., & Hackenberg, T. D. (2000). Timeout postponement without increased reinforcement frequency. *Journal of the Experimental Analysis of Behavior*, 74, 147-164.
- Vollmer, T. R., & Hackenberg, T. D. (2001). Reinforcement contingencies and social reinforcement: Some reciprocal relations between basic and applied research. *Journal of Applied Behavior Analysis*, 34, 241-253.
- Pietras, C. J., & Hackenberg, T. D. (2001). Risk sensitivity in humans as a function of an earnings budget. *Journal of the Experimental Analysis of Behavior*, 76, 1-19.
- Foster, T. A., Hackenberg, T. D., & Vaidya, M. (2001). Second-order schedules of token reinforcement with pigeons: Effects of fixed- and variable-ratio exchange schedules. *Journal of the Experimental Analysis of Behavior*, 76, 159-178.
- Hackenberg, T. D., & Vaidya, M. (2003). Determinants of pigeons' choices in token-based self-control procedures. *Journal of the Experimental Analysis of Behavior*, 79, 207-218.
- Pietras, C. J., & Hackenberg, T. D. (2003). Human risky choice across four probability distributions. *The Psychological Record*, 53, 443-457.
- Pietras, C. J., Locey, M. L., & Hackenberg, T. D. (2003). Human risky choice under temporal constraints: Tests of an energy-budget model. *Journal of the Experimental Analysis of Behavior*, 80, 59-74.
- Foster, T. A., & Hackenberg, T. D. (2004). Choice and unit price in a token reinforcement context. *Journal of the Experimental Analysis of Behavior*, 81, 5-25.
- Hackenberg, T. D. (2005). Of pigeons and people: Some observations on species differences in choice and self-control. *Brazilian Journal of Behavior Analysis*, 1, 135-147.
- Pietras, C. J., & Hackenberg, T. D. (2005). Response-cost punishment via token-loss with pigeons. *Behavioural Processes*, 69, 343-356.
- Bullock, C. E., & Hackenberg, T. D. (2006). Second-order schedules of token reinforcement with pigeons: Implications for unit price. *Journal of the Experimental Analysis of Behavior*, 85, 95-106.
- Hackenberg, T. D., & DeFulio, A. (2007). Timeout from reinforcement: Restoring a balance between analysis and application. *Mexican Journal of Behavior Analysis*, 33, 37-44.
- DeFulio, A., & Hackenberg, T. D. (2007). Discriminated timeout-avoidance in pigeons: The roles of added stimuli. *Journal of the Experimental Analysis of Behavior*, 88, 51-71.
- Bejarano, R., & Hackenberg, T. D. (2007). Interresponse-time reinforcement in chained schedules: Implications for the concept of conditioned reinforcement. *Journal of the Experimental Analysis of Behavior*, 88, 215-227.
- Raiff, B. R., Bullock, C. E., & Hackenberg, T. D. (2008). Response-cost punishment with pigeons: Further evidence of response suppression via token loss. *Learning & Behavior*, 36, 29-41.
- DeFulio, A., & Hackenberg, T. D. (2008). Combinations of response-dependent and response-independent schedule-correlated stimulus presentations in an observing procedure. *Journal of the Experimental Analysis of Behavior*, 89, 299-309.
- Yankelevitz, R. L., Bullock, C. E., & Hackenberg, T. D. (2008). Reinforcer accumulation in a token-reinforcement context. *Journal of the Experimental Analysis of Behavior*, 90, 283-299.
- Locey, M., Pietras, C. J., & Hackenberg, T. D. (2009). Human risky choice: Delay sensitivity depends on reinforcer type. *Journal of Experimental Psychology: Animal Behavior Processes*, 35, 15-22.
- Hackenberg, T. D. (2009). Token reinforcement: A review and analysis. *Journal of the Experimental Analysis of Behavior*, 91, 257-286.
- Hackenberg, T. D. (2009). Realism without Truth: A review of Giere's *Science without Laws and Scientific Perspectivism*. *Journal of the Experimental Analysis of Behavior*, 91, 391-402.

- Kangas, B. D., Berry, M. S., Cassidy, R. N., Dallery, J., Vaidya, M., & Hackenberg, T. D. (2009). Concurrent performance in a three-alternative choice situation: Response allocation in a Rock/Paper/Scissors game. *Behavioural Processes*, 82, 164-172.
- Kangas, B. D., & Hackenberg, T. D. (2009). On reinforcing human behavior in the laboratory: A brief review and some recommendations. *Experimental Analysis of Human Behavior Bulletin*, 27, 21-26.
- Lagorio, C. H., & Hackenberg, T. D. (2010). Risky choice in pigeons and humans: A cross-species comparison. *Journal of the Experimental Analysis of Behavior*, 93, 27-44.
- Macaskill, A., & Hackenberg, T. D. (2012). Providing a reinforcement history that reduces the sunk-cost effect. *Behavioural Processes*, 89, 212-218.
- Macaskill, A., & Hackenberg, T. D. (2012). The sunk cost effect with pigeons: Some determinants of decisions about persistence. *Journal of the Experimental Analysis of Behavior*, 97, 85-100.
- Andrade, L. F., & Hackenberg, T. D. (2012). Saving the best for last? A cross-species analysis of choice between reinforcer sequences. *Journal of the Experimental Analysis of Behavior*, 98, 45-64.
- Miras, A. D., Jackson, R. N., Jackson, S. N., Goldstone, A. P., Olbers, T., Hackenberg, T. D., Spector, A. C., & le Roux, C. W. (2012). Gastric bypass surgery for obesity decreases the reward value of a sweet-fat stimulus as assessed in a progressive-ratio task. *The American Journal of Clinical Nutrition*, 96, 467-473.
- Lagorio, C. H., & Hackenberg, T. D. (2012). Risky choice in pigeons: Preference for amount variability using a token-reinforcement system. *Journal of the Experimental Analysis of Behavior*, 98, 139-154.
- Tan, L., & Hackenberg, T. D. (2012). Social foraging in rats: Group and individual choice in dynamic environments. *Mexican Journal of Behavior Analysis*, 38, 87-105.
- Avila, R. S., Yankelevitz, R. L., Gonzalez, J. C., & Hackenberg, T. D. (2013). Varying the costs of sunk costs: Optimal and non-optimal choices in a sunk-cost task with humans. *Journal of the Experimental Analysis of Behavior*, 100, 165-173.
- Macaskill, A., & Hackenberg, T. D. (2013). Optimal and non-optimal choice in a laboratory-based sunk-cost task with humans: A cross-species replication. *Journal of the Experimental Analysis of Behavior*, 100, 301-315.
- Tan, L., Sosa, F., Talbot, E., Berg, D., Eversz, D., & Hackenberg, T. D. (2014). Effects of predictability and competition on group and individual choice in a free-ranging foraging environment. *Journal of the Experimental Analysis of Behavior*, 101, 288-302.
- DeFulio, A., Yankelevitz, R. L., Bullock, C. E., & Hackenberg, T. D. (2014). Generalized conditioned reinforcement with pigeons in a token economy. *Journal of the Experimental Analysis of Behavior*, 102, 26-46.
- Bullock, C. E., & Hackenberg, T. D. (2015). The several roles of stimuli in negative reinforcement. *Journal of the Experimental Analysis of Behavior*, 103, 269-287.
- Tan, L., & Hackenberg, T. D. (2015). Demand and preference for specific and generalized conditioned reinforcers in a token economy with pigeons. *Journal of the Experimental Analysis of Behavior*, 104, 296-314.
- Tan, L., & Hackenberg, T. D. (2016). Functional analysis of mutual behavior in rats (*Rattus norvegicus*). *Journal of Comparative Psychology*, 130, 13-23.
- Andrade, L. F., & Hackenberg, T. D. (2017). Substitution effects in a generalized token economy with pigeons. *Journal of the Experimental Analysis of Behavior*, 107, 123-135.
- Morales, I., Currie, P. J., Hackenberg, T. D., & Pastor, R. (2017). Opioidergic and dopaminergic modulation of cost/benefit decision-making in Long Evans rats. *Physiology and Behavior*, 179, 442-450.
- Hackenberg, T. D. (2018). Token reinforcement: Translational research and application. *Journal of Applied Behavior Analysis*, 51, 393-435.
- Hiura, L., Tan, L., & Hackenberg, T. D. (2018). To free or not to free: Social reinforcement effects in the social-release paradigm with rats. *Behavioural Processes*, 152, 37-46.
- Vanderhooft, L., Tan, L., & Hackenberg, T. D. (2019). Demand for social contact in rats: Toward a quantitative analysis of social reinforcement value. *Mexican Journal of Behavior Analysis*, 45, 330-358.

- Hackenberg, T. D., Vanderhooft, L., Huang, J., Wagar, M., Alexander, J., & Tan, L. (In Press). Social preference in rats. *Journal of the Experimental Analysis of Behavior*.
- Wan, H., Kirkman, C., Jensen, G., & Hackenberg, T. D. (Under review). Failure to find altruistic sharing in rats.

Invited commentaries and reviews

- Hackenberg, T. D. (1993). Commonsense and conventional wisdom (Commentary on Staddon). *Journal of the Experimental Analysis of Behavior*, 60, 457-460.
- Hackenberg, T. D., & Vaidya, M. (1996). On naming and symbolic behavior: In the beginning was the Name? (Commentary on Horne & Lowe) *Journal of the Experimental Analysis of Behavior*, 65, 291-293.
- Hackenberg, T. D. (1996). When being a mechanist wasn't so bad: Reply to Moxley. *The Behavior Analyst*, 19, 299-300.
- Hackenberg, T. D. (1998). Putting Skinner in context [A review of Smith and Woodward's *B. F. Skinner and Behaviorism in American Culture*]. *Contemporary Psychology*, 43, 503-505.
- Hackenberg, T. D. (2000). Jacques Loeb. In A. E. Kazdin (Ed.), *Encyclopedia of Psychology*. New York: Oxford University Press.
- Hackenberg, T. D. (2000). Schedules of reinforcement. In A. E. Kazdin (Ed.), *Encyclopedia of Psychology*. New York: Oxford University Press.
- Grace, R. C., & Hackenberg, T. D. (2004). Bridging the gap. (Preface to 2003 SQAB Proceedings) *Behavioural Processes*, 66, v-viii.
- Hineline, P. N., & Hackenberg, T. D. (2005). Obituary: Philip J. Bersh (1921-2004). *American Psychologist*, 60, 339.
- Hackenberg, T. D. (2008). Introduction: State of the Science Lectures. *The Behavior Analyst*, 31, 93.
- Thompson, T., & Hackenberg, T. D. (2009). Translational Science Lectures. *The Behavior Analyst*, 32, 269-271.
- Hackenberg, T. D. (2011). Beyond the basic-applied distinction (Invited article for APA Division 25 Award for Distinguished Contributions to Basic Research). *Division 25 Recorder*, 39 (1), 10.
- Hackenberg, T. D. (2013). From demand curves to public policy: Introduction to the Special Issue on Behavioral Economics. *Journal of the Experimental Analysis of Behavior*, 99, 1-2.
- Hackenberg, T. D. (2013). What's happened to Skinner's empirical epistemology? *The Behavior Analyst*, 36, 277-281.
- Hackenberg, T. D. (2014). Comments on *Unexpected results from a change in token type*: Some lessons from laboratory research. *Behavior Analysis in Practice*.
- Hackenberg, T. D. (2014). The outside story: A review of *Beyond the Brain: How Body and Environment Shape Animal and Human Minds* by Louise Barrett. *The Behavior Analyst*, 37, 125-131.

Published Abstracts

- Hackenberg, T. D., Dysken, M. W., Bakke, B. L., Vatassery, G. T., Zaiser, A. E., & Thompson, T. (1989). Neuroleptic treatment and mental retardation: Relations between learning, clinical response and plasma level of haloperidol. *Experimental Analysis of Human Behavior Bulletin*, 7, 14. (abstract)
- Hackenberg, T. D., & Axtell, S. (1991). Rule-governed behavior and sensitivity to remote consequences. *Experimental Analysis of Human Behavior Bulletin*, 9, 33. (abstract)
- Jacobs, E. A., & Hackenberg, T. D. (1992). Humans' choices in situations of time-based diminishing returns. *Proceedings of the 18th Annual Association for Behavior Analysis Convention*, 135. (abstract)
- Jacobs, E. A., & Hackenberg, T. D. (1992). Some counterintuitive aspects of counters. *Experimental Analysis of Human Behavior Bulletin*, 10, 36-37. (abstract)
- Joker, V. R., & Hackenberg, T. D. (1992). Instructional versus schedule control of humans' choices in situations of diminishing returns. *Proceedings of the 18th Annual Association for Behavior Analysis Convention*, 137. (abstract)

- Dougherty, D., Pietras, C. J., Jacobs, E. A., & Hackenberg, T. D. (1993). Pigeons' choices in situations of diminishing returns: Do initial-link stimulus conditions matter? *Proceedings of the 19th Annual Association for Behavior Analysis Convention*, 285. (abstract)
- Jackson, K., & Hackenberg, T. D. (1993). Self-control with token reinforcement in pigeons. *Proceedings of the 19th Annual Association for Behavior Analysis Convention*, 300. (abstract)
- Tompkins, B. F., & Hackenberg, T. D. (1994). Timeout postponement in humans with no reduction in overall timeout frequency. *Experimental Analysis of Human Behavior Bulletin*, 12, 10. (abstract)
- St. John, S. J., Markison, S., Guagliardo, N. A., Hackenberg, T. D., & Spector, A. C. (1996). Chorda tympani transection and partial desalivation differentially disrupt two-lever salt discrimination performance in rats. *Chemical Senses*, 21, 675. (abstract)
- Pietras, C. J., Hackenberg, T. D., & Hineline, P. N. (1996). Risk-sensitivity in humans: Does the form of the variability matter? *Experimental Analysis of Human Behavior Bulletin*, 14, 28. (abstract)
- Vaidya, M., & Hackenberg, T. D. (1996). Instructions and schedule sensitivity: Does degree of accuracy of instructions matter? *Experimental Analysis of Human Behavior Bulletin*, 14, 29-30. (abstract)
- Vaidya, M., & Hackenberg, T. D. (2000). Do equivalence classes mediate extensions of stimulus functions? *Experimental Analysis of Human Behavior Bulletin*, 18. (abstract)
- Pietras, C. J., & Hackenberg, T. D. (2000). Risky choice in humans under positive and negative energy budgets. *Experimental Analysis of Human Behavior Bulletin*, 18. (abstract)

INVITED LECTURES

- Hackenberg, T. D. (2004). On pigeons and people: Some observations on species differences in choice and self-control. Universidade de Brasilia, Brazil, August 2004.
- Hackenberg, T. D. (2004). Is human behavior optimal? Universidade Catolica de Goias, Goiania, Brazil, August 2004.
- Hackenberg, T. D. (2005). Token reinforcement: Past, present, and future. Division 25 Presidential Address, American Psychological Association Convention, Washington D.C.
- Hackenberg, T. D. (2005). The science and technology of token reinforcement systems. Invited address, Association for Behavior Analysis International Meeting, Beijing, China.
- Hackenberg, T. D. (2006). Token reinforcement: Past, present, and future. Invited address, California Association for Behavior Analysis Meeting, San Francisco.
- Hackenberg, T. D. (2006). Radical behaviorism at 60. Invited address, California Association for Behavior Analysis Meeting, San Francisco.
- Hackenberg, T. D. (2006). The science and technology of token reinforcement systems. Invited address, Maryland Association for Behavior Analysis, Baltimore.
- Hackenberg, T. D. (2006). Token reinforcement in the laboratory and beyond. Invited lecture, Johns Hopkins University Distinguished Lecture Series.
- Hackenberg, T. D. (2008). Comparative behavior analysis: Progress and pitfalls in cross-species analysis of behavior. Invited address, Texas Association for Behavior Analysis, Dallas.
- Hackenberg, T. D. (2008). Of pigeons and people: Some observations on cross-species analysis of behavior. Invited Convocation Address, Centenary College, Shreveport.
- Hackenberg, T. D. (2008). The tacts of life: Accuracy, science, and pseudoscience. Invited address, Association for Behavior Analysis Convention, Chicago.
- Hackenberg, T. D. (2008). Of pigeons and people: Some thoughts on cross-species analysis of decision-making. Invited lecture, Reed College, Portland.
- Hackenberg, T. D. (2010). Tokens of gratitude. Invited Address, American Psychological Association Convention, San Diego.
- Hackenberg, T. D. (2012). Who's afraid of metacognition? Invited address, Four Corners Association for Behavior Analysis, Winter Park.
- Hackenberg, T. D. (2012). In search of generalized reinforcement. Invited address, Mid-American Association for Behavior Analysis, Minneapolis.
- Hackenberg, T. D. (2012). What's happened to Skinner's empirical epistemology? Invited commentary, Association for Behavior Analysis International Conference on Theory & Philosophy, Santa Fe.

- Hackenberg, T. D. (2013). Risky choice: Problems and prospects. Invited address, Mexico Conference on Impulsivity and Addictive Behavior, Miacatlan Mexico.
- Hackenberg, T. D. (2013). The tacts of life: Accuracy, science, and pseudoscience. Invited address, California Association for Behavior Analysis, Garden Grove.
- Hackenberg, T. D. (2013). Translational research, missing links, and the problem of generalized reinforcement. Invited address, Berkshire Association for Behavior Analysis and Therapy, Amherst.
- Hackenberg, T. D. (2014). Translational research and the problem of generalized reinforcement. Invited lecture, Johns Hopkins University Distinguished Lecture Series.
- Hackenberg, T. D., & Lagorio, C. (2014). Leveling the playing field: The importance of procedural parity in cross-species comparisons of decision making. Invited paper, Southern Society for Philosophy and Psychology, Charleston.
- Hackenberg, T. D. (2014). What do we really know about other animals' minds? Invited lecture, Psi Chi Honor Society, Pacific University.
- Hackenberg, T. D. (2014). Does your dog feel guilt? Thinking realistically about animal emotions. Invited public lecture, Nerd Nite, Portland.
- Hackenberg, T. D., Tan, L., & Hiura, L. (2014). Working with and for each other: Toward an experimental analysis of social behavior. Invited address, Berkshire Association for Behavior Analysis and Therapy, Amherst.
- Hackenberg, T. D., Tan, L., & Hiura, L. (2015). Working with and for each other: Toward an experimental analysis of social behavior. Invited address, Texas Association for Behavior Analysis, Houston.
- Hackenberg, T. D. (2015). Token reinforcement: Bridging the gap between science and application. Invited lecture, Oregon Association for Behavior Analysis.
- Hackenberg, T. D. (2015). Working with and for each other: Toward an experimental analysis of social behavior. Invited address, Association for Behavior Analysis International, San Antonio.
- Hackenberg, T. D. (2015). The tacts of life: Accuracy, science, and pseudoscience. Invited address, Berkshire Association for Behavior Analysis and Therapy, Amherst.
- Hackenberg, T. D. (2016). Social behavior: The next frontier in behavior analysis? Keynote address, Invited address, California Association for Behavior Analysis, San Jose.
- Hackenberg, T. D. (2016). Generalized reinforcement: A research story. Invited address, Berkshire Association for Behavior Analysis and Therapy, Amherst.
- Hackenberg, T. D. (2017). To free or not to free: Empathy or social reinforcement as explanations of social release in rats. Invited lecture, California State University, Fresno.
- Hackenberg, T. D. (2017). To free or not to free: Determinants of social release in rats. Invited lecture, Society for the Quantitative Analysis of Behavior, Denver.
- Hackenberg, T. D. (2017). Token reinforcement: Bridging the gap between science and application. Invited lecture, ABA in Rome meeting, Rome.
- Hackenberg, T. D. (2017). Social behavior: A new frontier for behavior analysis. Invited lecture, Western Michigan University, Kalamazoo.
- Hackenberg, T. D. (2018). Social economics: Toward a cost-benefit analysis of pro-social behavior? Invited address, Texas Association for Behavior, Houston.
- Hackenberg, T. D. (2018). Token reinforcement: Bridging the gap between science and application. Invited lecture, National Autism Conference, State College.
- Hackenberg, T. D. (2018). Social economics: Can pro-social behavior be explained in cost-benefit terms? Invited address, Nevada Association for Behavior, Las Vegas.
- Hackenberg, T. D. (2019). Token reinforcement: Bridging the gap between science and application. Invited lecture, National Autism Conference, State College.
- Hackenberg, T. D. (2019). Toward a functional analysis of social behavior. Invited lecture, National Autism Conference, State College.
- Hackenberg, T. D. (2019). Social economics: Can pro-social behavior be explained in cost-benefit terms? Invited address, Berkshire Association for Behavior Analysis and Therapy, Worcester.

CONFERENCE PRESENTATIONS

Peer-reviewed papers

- Hineline, P. N., Wanchisen, B. A., Tatham, T. A., & Hackenberg, T. D. (1983). A paradigm that addresses humans' problem-solving and animals' foraging. Invited paper presented at NIH conference on Developmental Behavior Genetics and Behavior Analysis, Washington, D.C.
- Hackenberg, T. D. (1984). An assessment of time-based optimality theory. Paper presented as part of a symposium entitled, Foraging theory, operant theory, and progressive schedules of reinforcement. Association for Behavior Analysis Convention, Nashville.
- Hackenberg, T. D. (1985). Reductionism: Logical necessity or linguistic artifact? Paper presented at the Association for Behavior Analysis Convention, Columbus.
- Hackenberg, T. D., & Hineline, P. N. (1986). The time scale of appetitive/aversive interactions. Paper presented as part of a symposium entitled, Aversive control of human and non-human behavior: Drug effects and other issues. Association for Behavior Analysis Convention, Milwaukee.
- Hineline, P. N., & Hackenberg, T. D. (1987). Choice in relation to time-based diminishing returns. Paper presented as part of a symposium entitled, Behavior-analytic approaches to foraging. American Psychological Association Convention, New York.
- Hackenberg, T. D., Bakke, B. L., Dysken, M. W., Thompson, T., & Zaiser, A. (1988). Learning-blood level correlates in neuroleptic treatment. Paper presented at the Minnesota Association for Behavior Analysis, Minneapolis.
- Hackenberg, T. D., Dysken, M. W., Bakke, B. L., Vatassery, G. T., Zaiser, A. E., & Thompson, T. (1989). Neuroleptic treatment and mental retardation: Relations between learning, clinical response and plasma level of haloperidol. Paper presented at the Gatlinburg Conference for Research in Mental Retardation, Gatlinburg.
- Hackenberg, T. D., Dysken, M. W., Bakke, B. L., Vatassery, G. T., Zaiser, A. E., & Thompson, T. (1989). Relations between learning, clinical response, and plasma level of haloperidol in mental retardation. Paper presented as part of a symposium entitled, Repeated acquisition procedures and human performance: Drug effects and other issues. Association for Behavior Analysis Convention, Milwaukee.
- Bakke, B. L., Hackenberg, T. D., Zaiser, A. E., & Thompson, T. (1989). Bar code readers for frequency and intensity recording. Paper presented at the Association for Behavior Analysis Convention, Milwaukee.
- Thompson, T., Hackenberg, T. D., & Schaal, D. (1989). Pharmacological treatments for behavior problems in developmental disabilities. Invited paper presented at NIH Consensus Development Conference on Treatment of Destructive Behavior in People with Developmental Disabilities, Bethesda.
- Cerutti, D. T., Hackenberg, T. D., Zaiser, A., Axtell, S., & Thompson, T. (1990). Opioid mechanisms in self-injurious behavior: Effects of naltrexone. Paper presented at the Gatlinburg Conference for Research in Mental Retardation, Brainerd, MN.
- Hackenberg, T. D. (1994). Review of Jacques Loeb's *The Mechanistic Conception of Life*. Paper presented as part of a symposium entitled, Book reviews: Before, about, and beyond behaviorism. Association for Behavior Analysis Convention, Atlanta.
- Hackenberg, T. D. (1994). Rule-governed behavior and sensitivity to remote consequences of behavior. Paper presented as part of a symposium entitled, Current topics in the experimental analysis of verbal behavior: Private events, self-reports, rule-governed behavior, and symbolic functioning. American Psychological Association Convention, Los Angeles.
- Hackenberg, T. D. (1994). Is human behavior optimal? Invited paper presented at the Southeastern Association for Behavior Analysis Conference, Savannah.
- Hackenberg, T. D. (1995). Self-control in pigeons and people: Species difference or procedural artifact? Invited paper presented at the International Behaviorology Conference, Gainesville, FL.
- Jacobs, E. A., & Hackenberg, T. D. (1995). Human performance on negative slope schedules of reinforcement. Paper presented as part of a symposium entitled, Is it possible to study basic behavioral process in humans? Association for Behavior Analysis Convention, Washington D.C.

- Pietras, C. J., Hackenberg, T. D., & Jacobs, E. A. (1996). Patches, preferences, and progressive-schedule performances in pigeons and people. Paper presented as part of a symposium entitled, Progressive contingencies of reinforcement and their application. Association for Behavior Analysis Convention, San Francisco.
- Hackenberg, T. D. (1996). Self-control in pigeons and people: Species difference or procedural artifact? Invited paper presented at the American Psychological Association Convention, Toronto.
- Pietras, C. J., & Hackenberg, T. D. (1997). Timeout postponement without timeout-frequency reduction. Paper presented as part of a symposium entitled, Is timeout from reinforcement an aversive event? Association for Behavior Analysis Convention, Chicago.
- Vaidya, M., & Hackenberg, T. D. (1997). Token reinforcement, choice, and self-control in an adjusting delay procedure with pigeons. Paper presented as part of a symposium entitled, Self-control in pigeons and people: Species difference or procedural artifact? Association for Behavior Analysis Convention, Chicago.
- Hackenberg, T. D. (1998). Of pigeons and people: Some observations on species differences in self-control. Invited paper presented at the Northern California Association for Behavior Analysis Meeting, Oakland.
- Hackenberg, T. D. (1998). Verbal-nonverbal relations and sensitivity to remote consequences. Paper presented at the Northern California Association for Behavior Analysis Meeting, Oakland.
- Pietras, C. J., & Hackenberg, T. D. (1998). Choice and temporally extended response units. Paper presented as part of a symposium entitled, Multiple scales of analysis: Experimental studies of sensitivity to short-term and long-term environment-behavior relations. Association for Behavior Analysis Convention, Orlando.
- Vaidya, M., & Hackenberg, T. D. (1998). Schedules of token reinforcement: Stimulus-reinforcer relations and behavioral units. Paper presented as part of a symposium entitled, Stimulus-reinforcer relations and operant behavior. Association for Behavior Analysis Convention, Orlando.
- Pietras, C. J., & Hackenberg, T. D. (1999). On the symmetrical law of effect: Conditioned reinforcement and conditioned punishment with pigeons. Paper presented at the Association for Behavior Analysis Convention, Chicago.
- Foster, T. A., & Hackenberg, T. D. (2000). Token reinforcement in pigeons: Effects of fixed-ratio and variable-ratio production and exchange schedules. Paper presented at the Association for Behavior Analysis Convention, Washington D.C.
- Vaidya, M., & Hackenberg, T. D. (2000). Do equivalence classes mediate extensions of stimulus functions? Paper presented as part of a symposium entitled, Toward experimental analyses of relational responding: Methodological variations in the study of equivalence relations. Association for Behavior Analysis Convention, Washington D.C.
- Foster, T. A., & Hackenberg, T. D. (2001). Unit price and choice in a token reinforcement paradigm. Paper presented as part of a symposium entitled, Advances in behavioral economics. Association for Behavior Analysis Convention, New Orleans.
- Vaidya, M., & Hackenberg, T. D. (2001). Matching-to-sample under second-order schedules of token reinforcement. Paper presented as part of a symposium entitled, Experimental analyses of conditioned reinforcement: Tokens and observing. Association for Behavior Analysis Convention, New Orleans.
- Hackenberg, T. D., & Bejarano, R. (2001). Verbal-nonverbal relations in a choice context. Paper presented as part of a symposium entitled, Laboratory approaches to the study of complex verbal relations. International Association for Behavior Analysis Conference, Venice, Italy.
- Hackenberg, T. D., Pietras, C. J., Jacobs, E. A., & Doreys, N. (2001). Choice and temporally extended units: Evidence from people and pigeons. Paper presented as part of a symposium entitled, Molar and molecular influences on behavior. International Association for Behavior Analysis Conference, Venice, Italy.
- Locey, M., & Hackenberg, T. D. (2002). Risk sensitivity in humans: A comparison of different delay distributions. Paper presented as part of a symposium entitled, Experimental analysis of choice: Species continuity in sensitivity to delayed consequences. Association for Behavior Analysis Convention, Toronto.

- Hackenberg, T. D., & Bullock, C. (2003). Human risky choice with video reinforcers. Paper presented as part of a symposium entitled, Beyond points and money: On the use of consumable-type reinforcers in choice research with humans. Association for Behavior Analysis Convention, San Francisco.
- Foster, T. A., & Hackenberg, T. D. (2003). Effects of response requirement and reinforcer delay on demand and preference. Paper presented as part of a symposium entitled, Demand, preference, and hoarding: Recent research in behavioral economics. Association for Behavior Analysis Convention, San Francisco.
- Bullock, C., Yankelevitz, R., & Hackenberg, T. D. (2003). Reinforcer accumulation in a token reinforcement procedure: Implications for unit price. Paper presented as part of a symposium entitled, Beyond points and money: On the use of consumable-type reinforcers in choice research with humans. Association for Behavior Analysis Convention, San Francisco.
- Hackenberg, T. D. (2003). Realism without Truth: A review of Giere's *Science without Laws*. Paper presented as part of a symposium entitled, Outside the box: Reviews of books on perception, science, and ecological psychology. Association for Behavior Analysis Convention, San Francisco.
- Hackenberg, T. D., Pietras, C. J., Bullock, C., & Raiff, B. R. (2004). Response-cost punishment in pigeons. Paper presented as part of a symposium entitled, "Relative potency of appetitive and aversive events: Is bad stronger than good?" Association for Behavior Analysis Convention, Boston.
- Foster, T. A., & Hackenberg, T. D. (2004). Effects of unit-price components on pigeons' choices in a closed economy. Paper presented as part of a symposium entitled, "Advances in behavioral economics: Recent research on demand and preference." Association for Behavior Analysis Convention, Boston.
- Defulio, A. L., & Hackenberg, T. D. (2004). Effects of response-timeout interval and timeout-duration on discriminated avoidance of timeout in pigeons. Paper presented as part of a symposium entitled, "Avoidance and timeout." Association for Behavior Analysis Convention, Boston.
- Hackenberg, T. D., & Bullock, C. E. (2004). The several roles of stimuli in token reinforcement procedures. Paper presented at the American Psychological Association Convention, Honolulu.
- Hackenberg, T. D., & Bullock, C. E. (2004). Human risky choice with video reinforcers. Paper presented as part of a symposium entitled, "Choice and decision making in risky situations." International Association for Behavior Analysis Conference, Campinas, Brazil.
- Hackenberg, T. D. (2005). Back to the future: E. F. Malagodi's enduring contributions to token reinforcement. Paper presented as part of a symposium entitled, "Edward F. Malagodi: Experimental Analyst, Philosopher, Radical Behaviorist." Association for Behavior Analysis Convention, Chicago.
- DeFulio, A. L., & Hackenberg, T. D. (2005). Counting, timing, and stimulus control: Control of pigeons' keypecking by numerical properties of stimuli. Paper presented as part of a symposium entitled, "Stimulus Control." Association for Behavior Analysis Convention, Chicago.
- DeFulio, A. L., & Hackenberg, T. D. (2006). You can lead a pigeon to water AND make him drink: Some biological and methodological considerations in using water reinforcers with pigeons. Paper presented as part of a symposium entitled, "Fresh out of the box: Ecological considerations in conditioning experiments with pigeons." Association for Behavior Analysis Convention, Atlanta.
- Hackenberg, T. D., Bullock, C. E., DeFulio, A. L., & Yankelevitz, R. L. (2006). It's the exchange schedule, stupid! Exchange-schedule effects in token-reinforcement research. Paper presented as part of a symposium entitled, "Token reinforcement systems and the continuum from research to application." Association for Behavior Analysis Convention, Atlanta.
- DeFulio, A., Bullock, C. E., & Hackenberg, T. D. (2007). Will work for food (or water): Generalized reinforcement in a token economy with pigeons. Paper presented as part of a symposium entitled, "Token research: Basic to applied." Association for Behavior Analysis Convention, San Diego.
- Bullock, C. E., Hackenberg, T. D., & Johnson, P. S. (2007). Human risky choice in an adjusting-delay procedure. Paper presented as part of a symposium entitled, "Translational research on choice responding." Association for Behavior Analysis Convention, San Diego.
- Hackenberg, T. D., Raiff, B. R., & Bullock, C. E. (2007). Response-cost punishment: Token loss as an aversive event with pigeons. Paper presented as part of a symposium entitled, "Current research on aversive control." Association for Behavior Analysis Convention, San Diego.

- Yankelevitz, R. L., Hackenberg, T. D., & Bullock, C. E. (2007). Reinforcer accumulation: A cross-species analysis. Paper presented as part of a symposium entitled, "Recent advances in behavioral economics and delay discounting." Association for Behavior Analysis Convention, San Diego.
- Yankelevitz, R. L., & Hackenberg, T. D. (2008). Saving and spending in a token-accumulation procedure with pigeons. Paper presented as part of a symposium entitled, "Basic and applied research on token schedules." Association for Behavior Analysis Convention, Chicago.
- Lagorio, C. H., & Hackenberg, T. D. (2008). Risky choice in a token-reinforcement context: Implications for an animal model of gambling. Paper presented as part of a symposium entitled, "Gambling: pigeons, smokers, college students, and the elderly." Association for Behavior Analysis Convention, Chicago.
- de Andrade, L., & Hackenberg, T. D. (2008). Saving the best for last? Cross-species analysis of choices between reinforcer sequences. Paper presented as part of a symposium entitled, "Comparative behavior analysis: Toward a cross-species analysis of adaptive choice." Association for Behavior Analysis Convention, Chicago.
- Avila, R., Yankelevitz, R., & Hackenberg, T. D. (2008). Varying the costs of sunk costs in pigeons and people. Paper presented as part of a symposium entitled, "Comparative behavior analysis: Toward a cross-species analysis of adaptive choice." Association for Behavior Analysis Convention, Chicago.
- Hackenberg, T. D. (2009). Token reinforcement in the laboratory and beyond. Paper presented as part of a symposium entitled, "Science Board Translational Series: Laboratory and Applied Perspectives on Token Reinforcement." Association for Behavior Analysis Convention, Phoenix.
- Lagorio, C. H., & Hackenberg, T. D. (2009). Deal or No Deal? Risk taking in the context of a popular game. Paper presented as part of a symposium entitled, "Human Choice in Naturalistic and Gaming Contexts." Association for Behavior Analysis Convention, Phoenix.
- Kangas, B. D., Dallery, J., & Hackenberg, T. D. (2009). Concurrent performance in a three-alternative choice situation: Quantitative investigations using a Rock/Paper/Scissors game. Paper presented as part of a symposium entitled, "Human Choice in Naturalistic and Gaming Contexts." Association for Behavior Analysis Convention, Phoenix.
- Andrade, L. F., & Hackenberg, T. D. (2009). Choice, delays, and number of reinforcers: An analysis of intertemporal choice in pigeons. Paper presented as part of a symposium entitled, "Temporal organization of behavior and delayed reinforcement." Association for Behavior Analysis Convention, Phoenix.
- Lagorio, C. H., & Hackenberg, T. D. (2010). Risky choice in pigeons: Preference for amount variability using a token reinforcement paradigm. Paper presented as part of a symposium entitled, "Choice as a behavioral tool." Association for Behavior Analysis Convention, San Antonio.
- Macaskill, A. C., & Hackenberg, T. D. (2010). Contingency sensitivity and the sunk-cost fallacy in humans and pigeons. Paper presented as part of a symposium entitled, "Rational and irrational decision making: Is the subject always right?" Association for Behavior Analysis Convention, San Antonio.
- Rusak, J., & Hackenberg, T. D. (2010). An evaluation of framing effects and loss aversion in pigeons. Paper presented as part of a symposium entitled, "Rational and irrational decision making: Is the subject always right?" Association for Behavior Analysis Convention, San Antonio.
- Hackenberg, T. D., Dennis, J., & Kappeyne van de Coppello, N. J. (2011). Self-awareness and metacognition in rats. Paper presented at the Comparative Cognition Society Meeting, Seattle.
- Hackenberg, T. D. (2012). Metacognition in rats? Paper presented as part of a symposium entitled, "What behaviorists can contribute to the field of comparative cognition." Association for Behavior Analysis Convention, Seattle.
- Hackenberg, T. D. (2013). Generalized reinforcement: Bridging the gap between lab and application. Paper presented as part of an invited symposium entitled, "Frontiers of translational behavioral science." Association for Behavior Analysis Convention, Minneapolis.
- Hackenberg, T. D. (2013). Token accumulation as a model of savings: Some experiments with pigeons in a closed token economy. Paper presented as part of a symposium entitled, "From token reinforcement to economics and back: Toward more economically realistic models of preference and demand." Association for Behavior Analysis Convention, Minneapolis.

- Hackenberg, T. D., & Tan, L. (2014). Working together: Some conditions affecting mutual cooperation among rats. Paper presented as part of a symposium entitled, "Social behavior: New paradigms and findings." Association for Behavior Analysis Convention, Chicago.
- Hackenberg, T. D., Dennis, J., & Kappeyne van de Coppello, N. J. (2014). Self-awareness and metacognition in rats. Paper presented at the Cognitive Science Association for Interdisciplinary Learning Meeting, Hood River, Oregon.
- Hackenberg, T. D., Vanderhooft, L., Miller, L. B., Schweitzer, E., Porkar-Aghdam, S., & Tan, Lavinia, L. C. M. (2016). The role of familiarity in preference for social reinforcement in rats. Paper presented as part of a symposium entitled, "Cross-species analysis of social reinforcement: Evaluation and quantification of social reinforcers in rats, dogs, and humans." Association for Behavior Analysis Convention, Chicago.
- Franceschini, C., Vanderhooft, L., Schulingkamp, R., Heumann, C., Gutowsky, K., & Hackenberg, T. D. (2018). Social coordination in a public goods game setting with rats. Paper presented as part of a symposium entitled, "Cooperation, altruism, and social reinforcement: Current trends in the experimental analysis of social behavior." Association for Behavior Analysis Convention, San Diego.
- Hackenberg, T. D., Wan, H., & Kirkman, C. F. (2019). Do Rats Share Food?: Tests with the Social-Release Paradigm. Paper presented as part of a symposium entitled, "The experimental analysis of social behavior: Experimental approaches to the study of operant social behavior." Association for Behavior Analysis Convention, Chicago.
- Hackenberg, T., Kirkman, C. F., Wan, H., & Franceschini, A. C. (2019). Behavioral economics of food and social reinforcement. Paper presented as part of a symposium entitled, "Reinforcement in nonhuman animal social behavior." Association for Behavior Analysis Convention, Stockholm.

Peer-reviewed posters

- Hackenberg, T. D. (1981). Analysis of the differential effectiveness of oral vs. written positive practice overcorrection on increasing spelling performance. Poster presented at the Association for the Advancement of Behavior Therapy Convention, Toronto.
- Wilson, A. L., & Hackenberg, T. D. (1982). A functional analysis of "self-talk" in an autistic adult. Poster presented at the Association for Behavior Analysis Convention, Milwaukee.
- Hackenberg, T. D., & Hiline, P. N. (1984). An avoidance session can spoil your day. Poster presented at the Association for Behavior Analysis Convention, Nashville.
- Zaiser, A. E., Hackenberg, T. D., & Thompson, T. (1989). The use of an opiate antagonist in the treatment of self-injury. Poster presented at the Minnesota Association for Behavior Analysis, Mankato, MN
- Hackenberg, T. D., Wagner, E. S., & Axtell, S. (1990). Is human behavior optimal? Poster presented at the Association for Behavior Analysis Convention, Nashville.
- Kurki, D., & Hackenberg, T. D. (1990). Adolescents' choices in a self-control paradigm. Poster presented at the Association for Behavior Analysis Convention, Nashville.
- Cerutti, D. T., Hackenberg, T. D., Zaiser, A., Axtell, S., & Thompson, T. (1990). Endorphin activity in self-injurious behavior: Dose effects of naltrexone. Poster presented at the Association for Behavior Analysis Convention, Nashville.
- Hackenberg, T. D., & Axtell, S. (1991). Rule-governed behavior and sensitivity to remote consequences. Poster presented at the Association for Behavior Analysis Convention, Atlanta.
- Cerutti, D. T., Hackenberg, T. D., Zaiser, A., & Thompson, T. (1991). Evidence for elevated endogenous opioid activity in self-injurious behavior. Poster presented at the Association for Behavior Analysis Convention, Atlanta.
- Wagner, E. S., Hackenberg, T. D., Schuh, K. J., & Schaal, D. W. (1991). Effects of cocaine on choice in diminishing returns. Poster presented at the Association for Behavior Analysis Convention, Atlanta.
- Jacobs, E. A., & Hackenberg, T. D. (1991). A parametric analysis of humans' choices in situations of time-based diminishing returns. Poster presented at the Southeastern Association for Behavior Analysis Conference, Charleston.

- Jacobs, E. A., & Hackenberg, T. D. (1992). Some "counter-intuitive" aspects of counters. Poster presented at the Association for Behavior Analysis Convention, San Francisco.
- Joker, V. R., & Hackenberg, T. D. (1992). Instructional versus schedule control of humans' choices in situations of diminishing returns. Poster presented at the Association for Behavior Analysis Convention, San Francisco.
- Jackson, K., & Hackenberg, T. D. (1992). Token reinforcement, choice, and self-control in pigeons. Poster presented at the Southeastern Association for Behavior Analysis Conference, Asheville.
- Dougherty, D., Pietras, C. J., Jacobs, E. A., & Hackenberg, T. D. (1993). Pigeons' choices in situations of diminishing returns: Do initial-link stimulus conditions matter? Poster presented at the Association for Behavior Analysis Convention, Chicago.
- Jackson, K., & Hackenberg, T. D. (1993). Self-control with token reinforcement in pigeons. Poster presented at the Association for Behavior Analysis Convention, Chicago.
- Pietras, C. J., Hackenberg, T. D., & Jacobs, E. A. (1994). The effects of initial-link schedule value on pigeons' choices in situations of diminishing returns. Poster presented at the Association for Behavior Analysis Convention, Atlanta.
- Shuster, L. M., & Hackenberg, T. D. (1994). Effects of progressive-interval step size on pigeons' choices in situations of diminishing returns: Some preliminary data. Poster presented at the Association for Behavior Analysis Convention, Atlanta.
- Tompkins, B. F., & Hackenberg, T. D. (1994). Timeout postponement in humans with no reduction in overall timeout frequency. Poster presented at the Association for Behavior Analysis Convention, Atlanta.
- Jacobs, E. A., & Hackenberg, T. D. (1994). Human performance on negative-slope schedules of reinforcement. Poster presented at the Southeastern Association for Behavior Analysis Conference, Savannah.
- Pietras, C. J., & Hackenberg, T. D. (1994). Discrete-trial timeout-avoidance with pigeons. Poster presented at the Southeastern Association for Behavior Analysis Conference, Savannah.
- Pietras, C. J., & Hackenberg, T. D. (1995). Timeout-avoidance with pigeons: Are increases in reinforcement frequency necessary? Poster presented at the Association for Behavior Analysis Convention, Washington D.C.
- Jacobs, E. A., & Hackenberg, T. D. (1995). Human performance on negative-slope schedules of reinforcement: An analysis of interresponse times preceding reinforcement. Poster presented at the Southeastern Association for Behavior Analysis Conference, Charleston.
- Vaidya, M., & Hackenberg, T. D. (1995). Schedule and instructional control in situations of diminishing returns. Poster presented at the Southeastern Association for Behavior Analysis Conference, Charleston.
- Pietras, C. J., Hackenberg, T. D., & Hineline, P. N. (1996). Risk sensitivity in humans: Does the form of the variability matter? Poster presented at the Association for Behavior Analysis Convention, San Francisco.
- Vaidya, M., & Hackenberg, T. D. (1996). Instructions and schedule sensitivity: Does degree of accuracy of instructions matter? Poster presented at the Association for Behavior Analysis Convention, San Francisco.
- Bejarano, R., Vaidya, M., & Hackenberg, T. D. (1996). Ratio and interval schedules of token reinforcement. Poster presented at the Southeastern Association for Behavior Analysis Conference, Wilmington, NC.
- Pietras, C. J., & Hackenberg, T. D. (1996). Timeout-avoidance in pigeons despite reductions in overall reinforcement rate. Poster presented at the Southeastern Association for Behavior Analysis Conference, Wilmington, NC.
- Rhodes, C., & Hackenberg, T. D. (1996). How unitary are fixed-ratio units? Poster presented at the Southeastern Association for Behavior Analysis Conference, Wilmington, NC.
- Vaidya, M., & Hackenberg, T. D. (1996). Adjusting delays to token reinforcement: Do exchange delays matter? Poster presented at the Southeastern Association for Behavior Analysis Conference, Wilmington, NC.

- Vaidya, M., Bejarano, R., & Hackenberg, T. D. (1997). Fixed-ratio and fixed-interval schedules of token reinforcement: Does the exchange schedule matter? Poster presented at the Association for Behavior Analysis Convention, Chicago.
- Vaidya, M., & Hackenberg, T. D. (1997). Schedules of token reinforcement. I: Fixed-ratio vs. variable-ratio exchange schedules. Poster presented at the Southeastern Association for Behavior Analysis Conference, Chapel Hill, NC.
- Vaidya, M., & Hackenberg, T. D. (1997). Schedules of token reinforcement. II: Effects of fixed-interval exchange schedules. Poster presented at the Southeastern Association for Behavior Analysis Conference, Chapel Hill, NC.
- Vaidya, M., & Hackenberg, T. D. (1997). The determinants of pigeons' self-control choices in a token reinforcement procedure. Poster presented at the Southeastern Association for Behavior Analysis Conference, Chapel Hill, NC.
- Pietras, C. J., & Hackenberg, T. D. (1997). Effects of travel costs on foraging choices in a patchy environment. Poster presented at the Southeastern Association for Behavior Analysis Conference, Chapel Hill, NC.
- Bejarano, R., & Hackenberg, T. D. (1998). Verbal-nonverbal interactions in situations of time-based diminishing returns. Poster presented at the Southeastern Association for Behavior Analysis Conference, Asheville, NC.
- Pietras, C. J., & Hackenberg, T. D. (1998). Response-cost punishment with pigeons. Poster presented at the Southeastern Association for Behavior Analysis Conference, Asheville, NC.
- Murrey, N. A., Vaidya, M., & Hackenberg, T. D. (1998). How resistant are fixed-ratio units to disruption? Poster presented at the Southeastern Association for Behavior Analysis Conference, Asheville, NC.
- Pietras, C. J., & Hackenberg, T. D. (1999). Risky choice in humans: Preference between fixed and variable reinforcer amounts. Poster presented at the Association for Behavior Analysis Conference, Chicago.
- Foster, T. A., & Hackenberg, T. D. (1999). Second-order schedules of token reinforcement: Effects of fixed-ratio and variable-ratio production and exchange schedules. Poster presented at the Southeastern Association for Behavior Analysis Conference, Columbia, SC.
- Pietras, C. J., & Hackenberg, T. D. (1999). Effects of real vs. hypothetical consequences on risky choice. Poster presented at the Southeastern Association for Behavior Analysis Conference, Columbia, SC.
- Bullock, C. E., Vaidya, M., & Hackenberg, T. D. (2000). Schedules of token reinforcement in pigeons: Implications for the unit price concept. Poster presented at the Association for Behavior Analysis Conference, Washington D.C.
- Pietras, C. J., & Hackenberg, T. D. (2000). Choice in situations of diminishing returns: Further tests of two choice models. Poster presented at the Association for Behavior Analysis Conference, Washington D.C.
- Pietras, C. J., & Hackenberg, T. D. (2000). Risky choice in humans under positive and negative energy budgets. Poster presented at the Society for the Quantitative Analyses of Behavior Meeting, Washington D.C.
- Bullock, C. E., & Hackenberg, T. D. (2000). Unit price and second-order schedules of token reinforcement. Poster presented at the Southeastern Association for Behavior Analysis Conference, Chattanooga, TN.
- Foster, T. A., & Hackenberg, T. D. (2000). Choice and unit price in a token reinforcement paradigm. Poster presented at the Southeastern Association for Behavior Analysis Conference, Chattanooga, TN.
- Locey, M., Pietras, C. J., & Hackenberg, T. D. (2000). The effects of budget manipulations on human risky choice in situations of loss. Poster presented at the Southeastern Association for Behavior Analysis Conference, Chattanooga, TN.
- Bejarano, R., Hackenberg, T. D. (2001). Dissociating the conditioned-reinforcing and delay-signaling effects of stimuli in chained schedules of reinforcement. Poster presented at the Association for Behavior Analysis Convention, New Orleans.

- Pietras, C. J., Dorey, N., & Hackenberg, T. D. (2001). Do obtained switch points improve the predictions of two choice models? Poster presented at the Society for the Quantitative Analysis of Behavior Meeting, New Orleans.
- Foster, T. A., & Hackenberg, T. D. (2001). Self-control and token reinforcement with pigeons. Poster presented at the Southeastern Association for Behavior Analysis Meeting, Wilmington, NC.
- Bullock, C., & Hackenberg, T. D. (2001). Comparisons of tandem and second-order schedules of token reinforcement in pigeons. Poster presented at the Southeastern Association for Behavior Analysis Meeting, Wilmington, NC.
- Bullock, C., Foster, T. A., & Hackenberg, T. D. (2002). The several roles of stimuli in token reinforcement schedules. Poster presented at the Association for Behavior Analysis Convention, Toronto.
- Foster, T. A., & Hackenberg, T. D. (2002). Stimulus functions in token-based choice procedures. Poster presented at the Association for Behavior Analysis Convention, Toronto.
- Yankelevitz, R., Bullock, C., & Hackenberg, T. D. (2002). Hoarding in a token reinforcement context. Poster presented at the Southeastern Association for Behavior Analysis Meeting, Charleston.
- Yankelevitz, R., Bullock, C., & Hackenberg, T. D. (2004). Reinforcer accumulation in a token reinforcement context. Poster presented at the Association for Behavior Analysis Convention, Boston.
- Defulio, A. L., & Hackenberg, T. D. (2004). Can pigeons count? Analysis of numerical control of behavior using a peak procedure. Poster presented at the Association for Behavior Analysis Convention, Boston.
- Raiff, B. R., Bullock, C. E., & Hackenberg, T. D. (2004). Is token-loss an aversive event? Poster presented at the Southeastern Association for Behavior Analysis Meeting, Charlotte.
- Yankelevitz, R. L., & Hackenberg, T. D. (2005). Choice, token reinforcement, and sensitivity to remote consequences. Poster presented at the Association for Behavior Analysis Convention, Chicago.
- Cassidy, R. N., DeFulio, A., & Hackenberg, T. D. (2007). Can pigeons count?: Disentangling counting and timing in a peak procedure. Poster presented at the Association for Behavior Analysis Convention, San Diego.
- Lagorio, C. H., & Hackenberg, T. D. (2007). A cross-species analysis of risky choice. Poster presented at the Association for Behavior Analysis Convention, San Diego.
- Avila, R., Hackenberg, T. D., & Yankelevitz, R. L. (2007). Persistence in a sunk-cost task depends on relative response requirements. Poster presented at the Association for Behavior Analysis Convention, San Diego.
- Andrade, L. F., & Hackenberg, T. D. (2007). Choices between different temporal reinforcer sequences in humans and pigeons. Poster presented at the Association for Behavior Analysis Convention, San Diego.
- Lagorio, C. H., & Hackenberg, T. D. (2007). Will gamble for food: Risky sensitivity in token-reinforcement procedure with pigeons. Poster presented at the Southeastern Association for Behavior Analysis Meeting, Athens.
- Andrade, L., & Hackenberg, T. D. (2007). Intertemporal choice in pigeons: Assessing delay sensitivity to multiple reinforcers. Poster presented at the Southeastern Association for Behavior Analysis Meeting, Athens.
- Cassidy, R. N., Kangas, B. D., Vaidya, M., Dallery, J., & Hackenberg, T. D. (2007). Concurrent performance in a 3-alternative choice situation: Response allocation in a Rock/paper/Scissors game. Poster presented at the Southeastern Association for Behavior Analysis Meeting, Athens.
- Yankelevitz, R., & Hackenberg, T. D. (2007). Inflating the "coin of the realm:" Exchange-ratio effects on reinforcer accumulation in a token-reinforcement procedure. Poster presented at the Southeastern Association for Behavior Analysis Meeting, Athens.
- Cassidy, R. N., Hackenberg, T. D., Sizemore, G. M., DeFulio, A. L., & Kangas, B. D. (2008). The costs of remembering: Effects of a "memory aid" on performance in a delayed-matching-to-sample procedure. Poster presented at the Association for Behavior Analysis Convention, Chicago.

- Cassidy, R. N., Kangas, B. D., Vaidya, M., Dallery, J., & Hackenberg, T. D. (2008). Human matching performance in a rock/paper/scissors game: Response allocation in a three-alternative choice situation. Poster presented at the Association for Behavior Analysis Convention, Chicago.
- Lagorio, C. H., & Hackenberg, T. D. (2008). Will gamble for food: An analysis of risk sensitivity in pigeons. Poster presented at the Southeastern Association for Behavior Analysis Meeting, Atlanta.
- Berry, M. S., Kangas, B. D., & Hackenberg, T. D. (2008). When the matching law isn't enough: Economic analyses of indifference. Poster presented at the Southeastern Association for Behavior Analysis Meeting, Atlanta.
- Rusak, J., & Hackenberg, T. D. (2009). A preliminary evaluation of framing effects and loss aversion in pigeons. Poster presented at the Association for Behavior Analysis Convention, Phoenix.
- Berry, M. S., Kangas, B. D., & Hackenberg, T. D. (2009). Contingencies that predict indifference: Economic analyses when the matching law isn't enough. Poster presented at the Association for Behavior Analysis Convention, Phoenix.
- Macaskill, A. C., & Hackenberg, T. D. (2009). Contingency sensitivity and the sunk-cost fallacy in pigeons. . Poster presented at the Association for Behavior Analysis Convention, Phoenix.
- Tan, L., Canter, J., & Hackenberg, T. D. (2011). Group and individual foraging in a dynamic environment. Poster presented at the Society for the Quantitative Analysis of Behavior Conference, Denver.
- Macaskill, A. C., & Hackenberg, T. D. (2011). Signaling the optimal escape point reduces the frequency with which pigeons make the sunk cost error. Poster presented at the Association for Behavior Analysis Convention, Denver.
- Larisch, R., Wilkinson, G., & Hackenberg, T. D. (2012). Free birds: Relations between individual and group behavior in a free-ranging social environment. Poster presented at the Society for the Quantitative Analysis of Behavior Conference, Seattle.
- Sosa, F., Berg, D., Eversz, D., Talbot, E., Tan, L., & Hackenberg, T. D. (2012). Group and individual choice in a dynamic social environment. Poster presented at the Society for the Quantitative Analysis of Behavior Conference, Seattle.
- Talbot, E., Tan, L., & Hackenberg, T. D. (2012). Group and individual behavior in a social foraging paradigm: Sensitivity to changes in resource ratios. Poster presented at the Society for the Quantitative Analysis of Behavior Conference, Seattle.
- Tan, L. & Hackenberg, T. D. (2013). Social foraging in rats: Effects of reinforcement dimension and predictability on group and individual matching. Poster presented at the Association for Behavior Analysis Convention, Minneapolis.
- Hiura, L. C., Tan, L., & Hackenberg, T. D. (2014). How hard is a rat willing to work to release a trapped rat? Poster presented at the Association for Behavior Analysis Convention, Chicago.
- Hiura, L. C., Tan, L., & Hackenberg, T. D. (2015). Food or good company? Choice between edible and social reinforcement in rats. Poster presented at the Association for Behavior Analysis Convention, San Antonio.
- Lauffer, M., Tan, L., & Hackenberg, T. D. (2015). Developing an animal model of the Balloon Analogue Risk Task (BART). Poster presented at the Association for Behavior Analysis Convention, San Antonio.
- Vanderhooft, L., Tan, L., Huang, J., Lauffer, M., Hiura, L., & Hackenberg, T. D. (2015). How valuable is social reinforcement? An economic analysis of demand for social reinforcement. Poster presented at the Association for Behavior Analysis Convention, San Antonio.
- Huang, J., Tan, L., Vanderhooft, L., Lauffer, M., Hiura, L., & Hackenberg, T. D. (2015). The phantom rat: Separating social and non-social behavior in a reciprocity task with rats. Poster presented at the Association for Behavior Analysis Convention, San Antonio.
- Morales, I., Currie, P. J., Hackenberg, T. D., Pastor, R. (2015). Differential involvement of dopamine and opioid signaling in food preference and effort-related decision-making in rats. Poster presented at the 45th annual meeting of the Society for Neuroscience, Chicago, IL.
- Huang, J., Porkar-Aghdam, S., Miller, L. B., Schweitzer, E., Vanderhooft, L., & Hackenberg, T. D. (2016). No sense of stranger danger: Rats preferentially respond for unfamiliar rats compared to familiar rats. Poster presented at the Association for Behavior Analysis Convention, Chicago.

- Miller, L. B., & Hackenberg, T. D. (2016). The impact of exchange fixed-ratio requirements on token accumulation in a self-control paradigm. Poster presented at the Association for Behavior Analysis Convention, Chicago.
- Porkar-Aghdam, S., Franceschini, A. T., & Hackenberg, T. D. (2016). Token economies in pigeons: Analyzing economic demand and indifference curves. Poster presented at the Association for Behavior Analysis Convention, Chicago.
- Schweitzer, E., Renn, S. P., & Hackenberg, T. D. (2016). Effects of oxytocin on social reinforcement in rats: A dose-response analysis. Poster presented at the Association for Behavior Analysis Convention, Chicago.
- Vanderhooft, L., Neuringer, A., Franceschini, A. T., & Hackenberg, T. D. (2016). Resource exploitation in a modified public-goods game with rats. Poster presented at the Association for Behavior Analysis Convention, Chicago.
- Wagar, M., & Hackenberg, T. D. (2016). Companionship or solitude? Rats' preferences for social or non-social alternatives. Poster presented at the Association for Behavior Analysis Convention, Chicago.
- Garland, K., Hackenberg, T. D., & Franceschini, A. C. (2019). Social Enrichment Effects on Demand for Food With Fixed and Random Outcomes. Poster presented at the Association for Behavior Analysis Convention, Chicago.
- Glass, J., & Hackenberg, T. D. (2019). Demand and Preference for Specific and Generalized Reinforcers in Pigeons: Does Economic Context Matter? Poster presented at the Association for Behavior Analysis Convention, Chicago.
- Gutowsky, K., & Hackenberg, T. D. (2019). Repetitive Behavior in a Rat Model of Autism. Poster presented at the Association for Behavior Analysis Convention, Chicago.
- Kirkman, C. F., Wan, H., & Hackenberg, T. D. (2019). Assessing Cross-Price Interactions Between Food and Social Reinforcement. Poster presented at the Association for Behavior Analysis Convention, Chicago.
- Wan, H., Kirkman, C. F., & Hackenberg, T. D. (2019). Failure to Find Altruistic Behavior in Rats. Poster presented at the Association for Behavior Analysis Convention, Chicago.