

## CURRICULM VITAE

Amy L. Odum  
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### CONTACT INFORMATION

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### EDUCATIONAL HISTORY

1998 Ph.D. Department of Psychology, West Virginia University  
1996 M.A. Department of Psychology, West Virginia University  
1992 B.S. Department of Psychology, University of Florida

### ACADEMIC POSITIONS

2012 – present *Professor*  
Department of Psychology, Utah State University  
2007 – 2013 *Director*  
Undergraduate Program in Psychology, Utah State University  
2006 – 2012 *Associate Professor*  
Department of Psychology, Utah State University  
2003 – 2006 *Assistant Professor*  
Department of Psychology, Utah State University  
1999 – 2003 *Assistant Professor*  
Department of Psychology, University of New Hampshire  
1998 – 1999 *Postdoctoral Fellow*  
Human Behavioral Pharmacology Laboratory,  
Department of Psychiatry, University of Vermont

### AWARDS / HONORS

2013 Certificate of Reviewing Excellence, *Behavioural Processes*  
2009 Reviewer of the Year, *Behavioural Processes*  
2006 Researcher/Scholar of the Year, College of Education and Human Services, USU  
2004 Karl Lashley Distinguished Alumna, West Virginia University  
2003 NIDA Director's Travel Award to the meeting of the American Psychological Association  
1999 NIDA Director's Travel Award to College on Problems of Drug Dependence  
1998 Don Hake Award for Outstanding Graduate Student Career, Dept. of Psychology, WVU

### GRANTS

#### EXTERNAL

*Principal Investigator*

"Individualized Financial Education and Values Achievement"

Department of Workforce Services – Temporary Assistance for Needy Families

Project dates: 11/01/2014 – 10/31/2017

Total Costs: \$227,500

*Principal Investigator*

"Understanding Delay Discounting in Cigarette Smokers" (R01DA029100)

National Institutes of Health: National Institute on Drug Abuse

Project dates: 04/01/11 – 03/31/17 (no cost extension)  
Total Costs: \$1,400,000

*Co-Investigator* (Timothy A. Shahan, Principal Investigator)  
“Behavioral Momentum of Alcohol Self-Administration” (R01AA016786)  
National Institutes of Health: National Institute on Alcohol Abuse and Alcoholism  
Project Dates 04/01/08 – 03/31/13  
Total Costs \$1,124,000

*Co-Investigator* (Timothy A. Shahan, Principal Investigator)  
“Behavioral Momentum of Cocaine Self-Administration” (R21DA026497)  
National Institutes of Health: National Institute on Drug Abuse  
Project Dates 07/01/09 – 06/30/12  
Total Costs \$374,944

*Co-Investigator* (Timothy A. Shahan, Principal Investigator)  
“Discrimination, Reinforcement, and Resistance to Change”  
(Subcontract of R01MH65949, John A. Nevin PI)  
University of New Hampshire/National Institute of Mental Health  
Project Dates 2/15/06 – 12/31/10  
Total Costs at USU \$325,516

*Co-Investigator* (Timothy A. Shahan, Principal Investigator)  
“Divided Attention and Reinforcement Variables” (R01 MH072621)  
National Institutes of Health: National Institute of Mental Health  
Project dates: 07/01/05 – 06/30/09  
Total Costs: \$462,000

*Principal Investigator*  
“Discrimination, Reinforcement, and Resistance to Change”  
(Subcontract of R01MH65949, John A. Nevin PI)  
National Institute of Mental Health / University of New Hampshire  
Project Dates 7/01/02 – 2/14/06  
Total Costs at USU \$94,518

*Co-Investigator* (Timothy A. Shahan, Principal Investigator)  
“Alcohol Cues: Opioid Antagonism and Behavioral Economics” (R21 AA13576)  
National Institutes of Health: National Institute on Alcoholism and Alcohol Abuse  
Project dates: 04/01/03 - 3/31/07  
Total Costs: \$437,000

*Co-Investigator* (John A. Nevin, Principal Investigator)  
“Discrimination, Reinforcement, and Resistance to Change” (R01MH65949)  
National Institutes of Health: National Institute of Mental Health  
Project dates: 07/01/02 – 12/31/10  
Total Costs: \$543,016

*Principal Investigator*  
“Effects of Drugs in an Animal Model of Relapse” (R03DA14552)  
National Institutes of Health: National Institute on Drug Abuse

Project dates: 09/01/01 – 08/31/03  
Total Costs: \$72,500

**INTERNAL**

*Co-Investigator* (Ronald Gillam, Principal Investigator)  
“Developing a Visual Analog to Grammatical Comprehension: Preliminary Investigations”  
Seed Program to Advance Research Collaborations: Utah State University  
Project dates: 07/01/11 – 06/30/12  
Total Costs: \$34,985

*Principal Investigator*  
“Delay Discounting and Childhood Obesity: Development of a Model”  
Utah Agricultural Experiment Station Grant: Utah State University  
Project dates: 05/01/10 – 07/31/12  
Total Costs: \$17,147

*Principal Investigator*  
“The Effects of *d*-amphetamine on Temporal Perception: Immediate vs. Retrospective Timing”  
New Faculty Research Grant: Utah State University  
Project dates: 05/01/04 – 04/30/05  
Total Costs: \$11,270

**PUBLICATIONS (co-author \*graduate student, \*\*undergraduate student)**

**BOOK CHAPTERS (peer reviewed)**

- \*Craig, A. R., Nevin, J. A., & Odum, A. L. (2014). *Behavioral momentum and resistance to change* (pp. 249-274). In McSweeney, F. K., & Murphy, E. S. (Eds.), *The Wiley-Blackwell Handbook of Operant and Classical Conditioning*. Oxford, UK: Wiley-Blackwell.
- Odum, A. L., & \*Baumann, A. A. L. (2010). *Delay discounting: State and trait variable* (pp. 39-65). In G. J. Madden & W. K. Bickel (Eds.), *Impulsivity: The behavioral and neurological science of discounting*. Washington, DC: APA Books.

**REFEREED JOURNAL PUBLICATIONS**

- \*DeHart, W. B., \*Friedel, J. E., Lown, J. M., & Odum, A. L. (2016). The effects of financial education on impulsive decision making. *PLoS ONE*, *11*(7), e0159561.
- \*Friedel, J. E., \*DeHart, W. B., \*Frye, C. C., \*Rung, J. M., & Odum, A. L. (2016). Discounting of qualitatively different delayed health outcomes in current and never smokers. *Experimental and Clinical Psychopharmacology*, *24*, 18-29.
- \*Frye, C. C. J., \*Galizio, A., \*Friedel, J. E., \*DeHart, W. B., & Odum, A. L. (2016). Measuring delay discounting in humans using an adjusting amount task. *Journal of Visualized Experiments*, *107*, e53584-e53584.
- \*Berry, M. S., Repke, M. A., Nickerson, N. P., Conway, L. G. 3rd, Odum, A. L., & Jordan, K. E. (2015). Making time for nature: Visual exposure to natural environments lengthens subjective time perception and reduces impulsivity. *PLoS ONE*, *10*(11), e0141030.
- \*DeHart, W. B., & Odum, A. L. (2015). The effects of the framing of time on delay discounting. *Journal of the Experimental Analysis of Behavior*, *103*, 10-21.
- \*Berry, M. S., \*Sweeney, M. M., & Odum, A. L. (2014). Effects of baseline reinforcement rate on operant ABA and ABC renewal. *Behavioral Processes*, *108*, 87-93.

- \*Friedel, J. E., \*DeHart, W. B., Madden, G. J., & Odum, A. L. (2014). Impulsivity and cigarette smoking: Discounting of monetary and consumable outcomes in current and non-smokers. *Psychopharmacology*, *231*, 4517-4526.
- \*Berry, M. S., & Odum, A. L. (2014). Reinforcer magnitude and resistance to change of forgetting functions and response rates. *Journal of the Experimental Analysis of Behavior*, *101*, 373-384.
- \*Berry, M. S., \*Sweeney, M. M., \*Morath, J., Odum, A. L., & Jordan, K. E. (2014). The nature of impulsivity: Visual exposure to natural environments decreases impulsive decision-making in a delay discounting task. *PLoS ONE*, *9*(5), e97915.
- \*Morrison, K. L., Madden, G. J., Odum, A. L., \*Friedel, J. E. & Twohig, M. P. (2014). Altering impulsive decision making with an acceptance-based technique. *Behavior Therapy*, *45*, 630-639.
- \*Smits, R. R., \*Stein, J. S., \*Johnson, P. S., Odum, A. L., & Madden, G. J. (2013). Test-retest reliability and construct validity of the Experiential Discounting Task. *Experimental and Clinical Psychopharmacology*, *21*, 155-163.
- \*Baumann, A. A., & Odum, A. L. (2012). Impulsivity, risk taking, and timing. *Behavioural Processes*, *90*, 408-414.
- Nevin, J. A., Shahan, T. A., Odum, A. L., & \*Ward, R. D. (2012). Delayed matching to sample: Reinforcement has opposite effects on resistance to change in two related procedures. *Learning & Behavior*, *40*, 380-392.
- Odum, A. L. (2011). Delay discounting: I'm a *k*, you're a *k*. *Journal of the Experimental Analysis of Behavior*, *96*, 427-439.
- \*\*Barrett, S. T., & Odum, A. L. (2011). The role of repeated exposure on the reward-enhancing effects of nicotine. *Behavioural Pharmacology*, *22*, 283-290.
- Odum, A. L. (2011). Delay discounting: Trait variable? *Behavioural Processes*, *87*, 1-9.
- \*Rodzon, K., \*Berry, M. S., & Odum, A. L. (2011). Within-subject comparison of degree of delay discounting using titrating and fixed sequence procedures. *Behavioural Processes*, *86*, 164-167.
- \*Johnson, R. N., \*Ward, R. D., & Odum, A. L. (2010). Baseline training history and effects of methamphetamine on performance of pigeons on an interval-bisection task. *Behavioural Processes*, *84*, 484-489.
- Nevin, J. A., \*Ward, R. D., \*Jimenez-Gomez, C., Odum, A. L., & Shahan, T. A. (2009). Differential outcomes enhance accuracy of delayed matching to sample but not resistance to change. *Journal of Experimental Psychology: Animal Behavior Processes*, *35*, 74-91
- \*Ward, R. D., \*\*Barrett, S. T., \*Johnson, R. N., & Odum, A. L. (2009). Nicotine does not enhance discrimination performance in a temporal bisection procedure. *Behavioural Pharmacology*, *20*, 99-108.
- \*Ward, R. D., \*Johnson, R. N., & Odum, A. L. (2009). Effects of prefeeding, extinction, and distraction during sample and comparison presentation on sensitivity to reinforcer frequency in conditional discrimination. *Behavioural Processes*, *81*, 65-73.
- Nevin, J. A., Shahan, T. A., & Odum, A. L. (2008). Contrast effects in response rate and accuracy of delayed matching to sample. *Quarterly Journal of Experimental Psychology*, *61*, 1400-1409.
- \*Ward, R. D., & Odum, A. L. (2008). Sensitivity of conditional-discrimination performance to within-session variation of reinforcer frequency. *Journal of the Experimental Analysis of Behavior*, *90*(3), 301-311.
- \*Ward, R. D., \*\*Kynaston, A. D., \*Bailey, E. M., & Odum, A. L. (2008). Discriminative control of variability: Effects of successive stimulus reversals. *Behavioural Processes*, *78*, 17-24.
- Odum, A. L., & \*Baumann, A. A. L. (2007). Cigarette smokers show steeper discounting of both food and cigarettes than money. *Drug and Alcohol Dependence*, *91*, 293-296.
- Nevin, J. A., Davison, M., Odum, A. L., & Shahan, T. A. (2007). A theory of attending, remembering, and reinforcement in delayed matching to sample. *Journal of the Experimental Analysis of Behavior*, *88*(2), 285-317.

- Odum, A. L. & \*Ward, R. D. (2007). Characterizing the effects of *d*-amphetamine on temporal discrimination. *Behavioural Processes*, 75(2), 56-66.
- \*Ward, R. D., & Odum, A. L. (2007). Disruption of temporal discrimination and the choose-short effect. *Learning & Behavior*, 35(1), 60-70.
- Odum, A. L., \*Baumann, A. A. L., & \*\*Rimington, D. D. (2006). Discounting of delayed hypothetical money and food: Effects of amount. *Behavioural Processes*, 73(3), 278-84.
- \*Ward, R. D., \*Bailey, E. M., & Odum, A. L. (2006). Effects of *d*-amphetamine and ethanol on variable and repetitive key-peck sequences in pigeons. *Journal of the Experimental Analysis of Behavior*, 86(3), 285-305.
- Odum, A. L., \*Ward, R. D., \*Barnes, C. A., & \*\*Burke, K. A. (2006). Effects of delays to reinforcement on variability and repetition of response sequences. *Journal of the Experimental Analysis of Behavior*, 86, 159-179.
- \*Ward, R. D., & Odum, A. L. (2006). Effects of prefeeding, intercomponent-interval food, and extinction on temporal discrimination and pacemaker rate. *Behavioural Processes*, 71, 297-306.
- \*Ward, R. D., & Odum, A. L. (2005). Effects of morphine on temporal discrimination and color matching: General disruption of stimulus control or selective effects on timing? *Journal of the Experimental Analysis of Behavior*, 84, 401-415.
- Odum, A. L., Shahan, T. A., & Nevin, J. A. (2005). Resistance to change of forgetting functions and response rates. *Journal of the Experimental Analysis of Behavior*, 84, 65-75.
- Odum, A. L., & Shahan, T. A. (2004). *d*-Amphetamine reinstates behavior previously maintained by food: Importance of context. *Behavioural Pharmacology*, 15, 513-516.
- Odum, A. L. & \*Ward, R. D. (2004). The effects of morphine on the production and discrimination of interresponse times. *Journal of the Experimental Analysis of Behavior*, 82, 197-212.
- Nevin, J. A., \*\*Milo, J. S., Odum, A. L., & Shahan, T. A. (2003). Resistance to change of response rates and remembering. *Journal of the Experimental Analysis of Behavior*, 79, 307-321.
- Odum, A. L., & \*\*Rainaud, C. P. (2003). Discounting of delayed alcohol, food, and money. *Behavioural Processes*, 64, 305-313.
- \*Lieving, L. M., Odum, A. L., & Schaal, D. W. (2002). The effects of morphine on chained and clocked fixed-interval schedule performance in pigeons. *Behavioural Pharmacology*, 13, 221-228.
- Odum, A. L. (2002). Behavioral pharmacology and timing. *Behavioural Processes*, 57, 107-120.
- Odum, A. L., \*Lieving, L. M., & Schaal, D. W. (2002). Effects of *d*-amphetamine in a temporal discrimination procedure: Selective changes in timing or rate dependency? *Journal of the Experimental Analysis of Behavior*, 78, 195-214.
- Odum, A. L., Madden, G. J., & Bickel, W. K. (2002). Discounting of delayed health gains and losses by current, never, and ex-smokers of cigarettes. *Nicotine & Tobacco Research*, 4, 295-303.
- Odum, A. L. (2000). Reflections on the glass ceiling: Women in the experimental analysis of behavior. *The Behavior Analyst*, 23, 279-283.
- Odum, A. L., Madden, G. J., Badger, G. J., & Bickel, W. K. (2000). Needle sharing in opioid-dependent outpatients: Psychological processes underlying risk. *Drug and Alcohol Dependence*, 60, 259-266.
- Odum, A. L., & Schaal, D. W. (2000). The effects of morphine on fixed-interval patterning and temporal discrimination. *Journal of the Experimental Analysis of Behavior*, 74, 229-243.
- Schaal, D. W., Odum, A. L., & Shahan, T. A. (2000). Pigeons may not remember the stimuli that reinforced their recent behavior. *Journal of the Experimental Analysis of Behavior*, 73, 125-139.
- Shahan, T. A., Odum, A. L., & Bickel, W. K. (2000). Nicotine gum as a substitute for cigarettes: A behavioral economic analysis. *Behavioural Pharmacology*, 11, 71-79.
- Bickel, W. K., Odum, A. L., & Madden, G. J. (1999). Impulsivity and cigarette smoking: Delay discounting in current, never, and ex-smokers. *Psychopharmacology*, 146, 447-454.
- Odum, A. L., & Schaal, D. W. (1999). The effects of morphine on clocked fixed-interval performance: Stimulus function or strength of stimulus control? *Behavioural Pharmacology*, 10, 243-255.

- Odum, A. L., \*\*Haworth, S. C., & Schaal, D. W. (1998). Food deprivation level alters the effects of morphine on pigeons' key pecking. *Journal of the Experimental Analysis of Behavior*, 69, 295-310.
- Schaal, D. W., \*Miller, M. A., & Odum, A. L. (1995). Cocaine's effects on food-reinforced pecking in pigeons depend on food-deprivation level. *Journal of the Experimental Analysis of Behavior*, 64, 61-73.

### **NON-REFEREED PUBLICATIONS**

- Odum, A. L. (2006). Interval timing: The current status. *Behavioural Processes*, 71, 75-76.
- Odum, A. L. (2003). B. F. Skinner. In Irons-Georges, T. (Ed.), *Magill's Encyclopedia of Social Science: Psychology*. Pasadena, CA: Salem Press.
- Odum, A. L. (2003). Learning. In Irons-Georges, T. (Ed.), *Magill's Encyclopedia of Social Science: Psychology*. Pasadena, CA: Salem Press.

### **PRESENTATIONS**

#### **INVITED**

- Odum, A. L., \*Friedel, J. E., & \*DeHart, W. B. (2014, February). *Delay discounting across commodities*. Talk presented at the annual meeting of the Texas Association for Behavior Analysis, San Antonio, TX.
- Odum, A. L. (2013, October). *Behavioral momentum: Theory and data*. Talk presented at the annual meeting of the Nevada Association for Behavior Analysis, Reno, NV.
- Odum, A. L. (2012, September). *Delay discounting and impulsivity*. Talk presented at the 9<sup>th</sup> annual meeting of the New Zealand Association for Behaviour Analysis, Wellington, New Zealand.
- Odum, A. L. (2012, March). *Delay discounting: What is it and what does it mean?* Talk presented at the annual meeting of the Connecticut Association for Behavior Analysis, Cromwell, CT.
- Odum, A. L. (2011, August). *Delay discounting: Concepts, findings, models, and analysis*. Colloquium presented at the Department of Psychology, Idaho State University, Pocatello, ID.
- Odum, A. L. (2011, June). *A delay discounting primer*. Colloquium presented at the Department of Psychology, Charles de Gaulle University – Lille III, Lille, France.
- Odum, A. L. (2011, May). *Delay discounting: Who, what, when, why, where, and how?* Preeminent tutorial given for the Society of the Quantitative Analysis of Behavior at the 37<sup>th</sup> annual meeting of the Association for Behavior Analysis International, Denver, CO.
- Odum, A. L. (2010, October). *Behavioral momentum and the persistence of remembering*. Talk presented at the annual meeting of the Southeastern Association for Behavior Analysis, Asheville, NC.
- Odum, A. L. (2010, May). *Delay discounting: State and trait contributions*. Talk presented at the annual meeting of the Society for the Quantitative Analysis of Behavior, San Antonio, TX.
- Odum, A. L., & \*Baumann, A. A. L. (2008, April). *Delay discounting: Environmental and organismic contributions*. Talk presented at the annual meeting of the Four Corners Association for Behavior Analysis, Boulder, CO.
- Odum, A. L., & \*Ward, R. D. (2006, May). *Characterizing the effects of drugs on temporal discrimination*. Talk presented at the annual meeting of the Society for the Quantitative Analysis of Behavior, Atlanta, GA.
- Odum, A. L. (2004, February). *Temporal discounting: Assessing and understanding impulsivity*. Talk presented at the annual meeting of the California Association for Behavior Analysis, San Francisco, CA.
- Odum, A. L., & \*Barnes, C. A. (2002, October). *The effects of delayed reinforcement on behavioral variability and repetition*. Talk presented at the annual meeting of the Mid-American Association for Behavior Analysis, Kalamazoo, MI.
- Odum, A. L. (2001, October). *Understanding impulsivity: Delay discounting investigations*. Talk

presented at the annual meeting of the Berkshire Association for Behavior Analysis and Therapy, Amherst, MA.

Odum, A. L. (2001, October). *The neuropharmacological model of timing: A beautiful theory and some ugly facts*. Talk presented at the annual meeting of the Southeastern Association for Behavior Analysis, Wilmington, NC.

Odum, A. L. (2001, May). *Behavioral pharmacology and timing*. Talk presented at the annual meeting of the Society for the Quantitative Analysis of Behavior, New Orleans, LA.

Odum, A. L. (1998, December). *Delay discounting: Understanding drug abuse and impulsivity*. Colloquium presented at the Department of Psychology, Keio University, Tokyo, Japan.

### **SYMPOSIA, PAPERS SESSIONS, POSTERS, PANEL DISCUSSIONS**

Odum, A. L. (2013, May, Panel Member). *Delay discounting: Implications for future research across different perspectives*. (Frank D. Buono, Chair). Panel discussion presented at the 40<sup>th</sup> annual meeting of the Association for Behavior Analysis International, Minneapolis, MN.

\*Berry, M. S., & Odum, A. L. (2013, May). *Response rates, reinforcer rates, and reinstatement of extinguished behavior*. In J. Bai (Chair), *Behavioral Momentum Theory: 30 years*. Symposium presented at the 39<sup>th</sup> annual meeting of the Association for Behavior Analysis International, Minneapolis, MN.

\*Friedel, J. E., & Odum, A. L. (2013, May). *Methodological issues in the discounting of complex outcomes*. In S. R. Lawyer (Chair), *Methodological advancements in discounting research*. Symposium presented at the 39<sup>th</sup> annual meeting of the Association for Behavior Analysis International, Minneapolis, MN.

\*Berry, M. S., & Odum, A. L. (2012, May). *Reinforcer magnitude and resistance to disruption of forgetting functions*. In C. A. Podlesnik (Chair), *Conditional discriminations: Different stimuli and differential payoffs, but different processes?* Symposium presented at the 38<sup>th</sup> annual meeting of the Association for Behavior Analysis International, Seattle, WA.

\*Berry, M. S., & Odum, A. L. (2011, May). *The effects of baseline reinforcer rates on resistance to extinction and renewal*. In C. Cancado (Chair), *Resurgence and renewal: Reinforcement rates, schedules, and context as determinants of response recovery processes*. Symposium presented at the 37<sup>th</sup> annual meeting of the Association for Behavior Analysis International, Denver, CO.

\*Berry, M. S., Shahan, T. A., & Odum, A. L. (2011, May). *Effects of relative reinforcement rate on operant ABC renewal*. Poster presented at the annual meeting of the Society for the Quantitative Analysis of Behavior, Denver, CO.

Bloom, S. E., Higbee, T. S., Samaha, A., & Odum, A. L. (2011, May). *Utah association for behavior analysis*. Poster presented at the 37<sup>th</sup> annual meeting of the Association for Behavior Analysis International, Denver, CO.

\*Hutchison, D., & Odum, A. L. (2011, May). *Amount-dependent delay discounting in rats*. Poster presented at the annual meeting of the Society for the Quantitative Analysis of Behavior, Denver, CO.

\*Hutchison, D., & Odum, A. L. (2011, May). *Reinstatement when reinforcer rates are the same*. In A. L. Odum (Chair), *Behavioral momentum theory: What to make of the effects of response rate on resistance to change?* Symposium presented at the 37<sup>th</sup> annual meeting of the Association for Behavior Analysis International, Denver, CO.

Odum, A. L. (May, 2011, Chair). *Behavioral momentum theory: What to make of the effects of response rate on resistance to change?* Symposium presented at the 37<sup>th</sup> annual meeting of the Association for Behavior Analysis International, Denver, CO.

\*Rodzon, K. S., \*Berry, M. S., Odum, A. L., & Jordan, K. E. (2011, May). *Influence of immediate amount presentation on degree of delay discounting in a hypothetical money choice task*. Poster presented at the annual meeting of the Society for the Quantitative Analysis of Behavior, Denver, CO.

- Shahan, T. A., Madden, G. J., Odum, A. L., & Samaha, A. (2011, May). *Utah State University: Behavior analysis training in the department of psychology*. Poster presented at the 37<sup>th</sup> annual meeting of the Association for Behavior Analysis International, Denver, CO.
- \*\*Norlund, B. R., \*Berry, M. S., \*Johnson, R. N., & Odum, A. L. (2010, May). *The effects of baseline reinforcer rate on resistance to extinction and resurgence*. Poster presented at the 36<sup>th</sup> annual meeting of the Association for Behavior Analysis International, San Antonio, TX.
- \*Berry, M. S., & Odum, A. L. (2010, May). *The effects of baseline reinforcer rates on responding during extinction and renewal*. Poster presented at the annual meeting of the Society for the Quantitative Analysis of Behavior, San Antonio, TX.
- \*Hutchison, D., & Odum, A. L. (2010, May). *Comparison of different models of delay discounting: Different commodities*. Poster presented at the annual meeting of the Society for the Quantitative Analysis of Behavior, San Antonio, TX.
- \*Keyl, A. A., & Odum, A. L. (2010, May). *Methylphenidate changes the within-session pattern of response rates in rats*. In A. A. Keyl (Chair), *Quantitative analysis of the effects of drugs on behavior*. Symposium presented at the 36<sup>th</sup> annual meeting of the Association for Behavior Analysis International, San Antonio, TX.
- Odum, A. L., \*Hutchison, D., & \*Ward, R. D. (2010, May). *Persistence of remembering in symbolic matching-to-sample*. In K. G. White (Chair), *Models of remembering*. Symposium presented at the 36<sup>th</sup> annual meeting of the Association for Behavior Analysis International, San Antonio, TX.
- Odum, A. L. (2010, May, chair). *The practical utility of behavioral economics: A "how-to" session*. Invited talk presented by G. J. Madden at the 36<sup>th</sup> annual meeting of the Association for Behavior Analysis International, San Antonio, TX.
- Shahan, T. A., Odum, A. L., & Samaha, A. (2010, May). *Utah State University: Behavior analysis training in the Department of Psychology*. Poster presented at the 36<sup>th</sup> annual meeting of the Association for Behavior Analysis International, San Antonio, TX.
- \*Ward, R. D., Odum, A. L., Shahan, T. A., & Nevin, J. A. (2010, May). *Overall reinforcer frequency impacts conditional discrimination accuracy and sensitivity to reinforcer frequency but not resistance to disruption*. Poster presented at the annual meeting of the Society for the Quantitative Analysis of Behavior, San Antonio, TX.
- \*Baumann, A. A., & Odum, A. L. (2009, May). *Relationship between impulsivity, risk taking, time perception, and time perspective*. In A. A. Baumann, Chair, *Recent research on delay discounting and timing*. Symposium presented at the 35<sup>th</sup> annual meeting of the Association for Behavior Analysis International, Phoenix, AZ.
- \*Johnson, R. N., & Odum, A. L. (2009, May). *Effects of reinforcer availability on disrupted temporal performance*. Poster presented at the 35<sup>th</sup> annual meeting of the Association for Behavior Analysis International, Phoenix, AZ.
- \*Johnson, R. N., \*Ward, R. D., & Odum, A. L. (2009, May). *Methamphetamine and timing: Effects of baseline training length*. Poster presented at the annual meeting of the Society for the Quantitative Analysis of Behavior, Phoenix, AZ.
- Odum, A. L. (2009, May, Chair). *Science board translational series: Delay discounting and drug abuse*. Symposium presented at the 35<sup>th</sup> annual meeting of the Association for Behavior Analysis International, Phoenix, AZ.
- Odum, A. L. (2009, May, Panel Member). *Professional development series: Prominent women in behavior analysis* (Jennifer A. Bonow, Chair). Panel discussion presented at the 35<sup>th</sup> annual meeting of the Association for Behavior Analysis International, Phoenix, AZ.
- Odum, A. L. (2009, May, Panel Member). *Drilling the stars* (Joanna Arentez, Chair). Panel discussion presented at the annual meeting of the Society for the Quantitative Analysis of Behavior, Phoenix, AZ.
- Shahan, T. A., & Odum, A. L. (2009, May). *Utah State University: Behavior analysis training in the department of psychology*. Poster presented at the 35<sup>th</sup> annual meeting of the Association for



- Behavior Analysis International, Phoenix, AZ.
- \*Thomas, W. P., & Odum, A. L. (2009, May). *Differential sensitization and tolerance to the effects of d-amphetamine on random-interval and random-ratio schedules*. Poster presented at the 35<sup>th</sup> annual meeting of the Association for Behavior Analysis International, Phoenix, AZ.
- \*\*Barrett, S. T., \*Johnson, R. N., \*Ward, R. D., & Odum, A. L. (2008, May). *Effects of nicotine on temporal discrimination and attending to temporal samples*. In B. Lovelace, Chair, *Drug effects on conditional discriminations*. Symposium presented at the 34th annual meeting of the Association for Behavior Analysis, Chicago, IL.
- \*Baumann Neves, A. A. L., \*Thomas, W. P., Bates, S. C., \*Marquit, J. D., & Odum, A. L. (2008, May). *Discounting of delayed and probabilistic increases in temperature as a result of climate change*. Poster presented at the annual meeting of the Society for the Quantitative Analysis of Behavior, Chicago, IL.
- \*Baumann Neves, A. A. L., \*Thomas, W. P., & Odum, A. L. (2008, May). *Delay discounting of money, gift certificates for food and food*. Poster presented at the 34th annual meeting of the Association for Behavior Analysis, Chicago, IL.
- \*\*Kynaston, A. D., \*Thomas, W. P., & Odum, A. L. (2008, May). *Contingencies affecting the development of tolerance and sensitization: Random-ratio vs. random-interval schedules*. In M. Locey, Chair, *Factors contributing to the development of tolerance and sensitization to drugs of abuse*. Symposium presented at the 34th annual meeting of the Association for Behavior Analysis, Chicago, IL.
- \*Ward, R. D., & Odum, A. L. (2008). *Disruption of steady-state sensitivity to reinforcer frequency*. Poster presented at the annual meeting of the Society for the Quantitative Analysis of Behavior, Chicago, IL.
- Odum, A. L., \*\*Kynaston, A. D., & \*\*Newbold, C. L. (2007, August). *Sensitization develops to the effects of repeated d-amphetamine on responding of rats under random-ratio and random-interval schedules of food delivery*. In R. C. Pitts, Chair, *Behavioral pharmacology of stimulants - pharmacological and non-pharmacological factors*. Symposium presented at the 115th annual meeting of the American Psychological Association, San Francisco, CA.
- \*Baumann Neves, A. A. L., \*\*Kynaston, A. D., \*\*Alder, J. K, & Odum, A. L. (2007, May). *To eat, not to eat, or to exchange: Discounting of food, gasoline, and money*. In A. L. Odum, Chair, *Delay discounting*. Symposium presented at the 33<sup>rd</sup> annual meeting of the Association for Behavior Analysis, San Diego, CA.
- \*\*Kynaston, A. D., \*Bailey, E., \*Ward, R. D., & Odum, A. L. (2007, May). *Discriminative control of variable behavior: Effects of successive stimulus reversals*. Poster presented at the 33<sup>rd</sup> annual meeting of the Association for Behavior Analysis, San Diego, CA.
- \*\*Newbold, C. L., \*\*Kynaston, A. D., & Odum, A. L. (2007, May). *The effects of operant contingencies on drug sensitization and tolerance to chronic administration of amphetamine*. Poster presented at the 33<sup>rd</sup> annual meeting of the Association for Behavior Analysis, San Diego, CA.
- Odum, A. L. (2007, May, Chair). *Delay discounting*. Symposium presented at the 33<sup>rd</sup> annual meeting of the Association for Behavior Analysis, San Diego, CA.
- Odum, A. L., \*Ward, R. D., \*Jiménez-Gómez, C., Shahan, T. A., & Nevin, J. A. (2007, May). *Persistence of accuracy and response rate in delayed matching-to-sample with differential outcomes*. In J. A. Nevin, Chair, *Conditional discriminations: Conceptual issues and new findings*. Symposium presented at the 33<sup>rd</sup> annual meeting of the Association for Behavior Analysis, San Diego, CA.
- Shahan, T. A., & Odum, A. L. (2007, May). *Utah State University: Behavior analysis training in the department of psychology*. Poster presented at the 33<sup>rd</sup> annual meeting of the Association for Behavior Analysis, San Diego, CA.

- \*Ward, R. D., & Odum, A. L. (2007, May). *Disruption of temporal discrimination and the choose-short effect*. In K. A. Saulsgiver, Chair, *Pharmacological and non-pharmacological disruptors of timing: Current results and theoretical implications*. Symposium presented at the 33<sup>rd</sup> annual meeting of the Association for Behavior Analysis, San Diego, CA.
- \*Ward, R. D., & Odum, A. L. (2007, May). *Stimulus dimension and resistance to change of conditional discrimination*. In J. A. Nevin, Chair, *Conditional discriminations: Conceptual issues and new findings*. Symposium presented at the 33<sup>rd</sup> annual meeting of the Association for Behavior Analysis, San Diego, CA.
- \*Bailey, E., & Odum, A. L. (2006, May). *Effects of a cannabinoid agonist on the reinforcing efficacy of self-administered ethanol in rats*. Poster presented at the 32<sup>nd</sup> annual meeting of the Association for Behavior Analysis, Atlanta, GA.
- \*Baumann Neves, A. A. & Odum, A. L. (2006, May). *Decision making: Base rate neglect and contextual factors*. Poster presented at the 32<sup>nd</sup> annual meeting of the Association for Behavior Analysis, Atlanta, GA.
- Odum, A. L. (2006, May, Chair). *Discriminating and attending*. Symposium presented at the 32<sup>nd</sup> annual meeting of the Association for Behavior Analysis, Atlanta, GA.
- Nevin, J. A., Shahan, T. A., & Odum, A. L. (2006, May). *Contrast effects on accuracy and response rate in delayed matching to sample*. In A. L. Odum, Chair, *Discriminating and attending*. Symposium presented at the 32<sup>nd</sup> annual meeting of the Association for Behavior Analysis, Atlanta, GA.
- Shahan, T. A., & Odum, A. L. (2006, May). Utah State University: Behavior analysis training in the department of psychology. Poster presented at the 32<sup>nd</sup> annual meeting of the Association for Behavior Analysis, Atlanta, GA.
- \*Ward, R. D., & Odum, A. L. (2006, May). *Resistance to change of temporal discrimination*. In K. A. Lattal, Chair, *The temporal control of behavior*. Symposium presented at the 32<sup>nd</sup> annual meeting of the Association for Behavior Analysis, Atlanta, GA.
- \*Ward, R. D., & Odum, A. L. (2006, May). Effects of *d*-amphetamine on stimulus control and temporal discrimination in position and color-matching variants of the interval-bisection procedure. In E. McClure, Chair, *Topics in timing*. Symposium presented at the 32<sup>nd</sup> annual meeting of the Association for Behavior Analysis, Atlanta, GA.
- Odum, A. L. (2005, May, Chair). *Effects of amphetamine on timing*. Symposium presented at the 31<sup>st</sup> annual meeting of the Association for Behavior Analysis, Chicago, IL.
- Odum, A. L. (2005, May, Chair). *Ethanol self-administration*. Symposium presented at the 31<sup>st</sup> annual meeting of the Association for Behavior Analysis, Chicago, IL.
- Odum, A. L. (2005, May, Chair). *2005 ABA Tutorial: Pharmacology for behavioral scientists*. Invited tutorial (Gail Winger, presenter) at the 31<sup>st</sup> annual meeting of the Association for Behavior Analysis, Chicago, IL.
- Odum, A. L. (2005, May, Chair). *A Pavlovian conditioning approach to studying discriminative stimulus effects of nicotine*. Invited paper session (Rick A. Bevins, presenter) at the 31<sup>st</sup> annual meeting of the Association for Behavior Analysis, Chicago, IL.
- \*Baumann, A. A., Odum, A. L., & Charlton, S. R. (2005, May). *Decision making: Base rate, context and degree of exposure*. In J. Abreu-Rodrigues (Chair), *Conjunction fallacy and base-rate error: Are those behaviors controlled by reinforcement contingencies?* Symposium presented at the 31<sup>st</sup> annual meeting of the Association for Behavior Analysis, Chicago, IL.
- \*Ward, R. D., \*\*Packer, R., & Odum, A. L. (2005, May). *Effects of d-amphetamine on temporal discrimination: Position versus symbolic matching-to-sample procedures*. In A.L. Odum (Chair), *Effects of amphetamine on timing*. Symposium presented at the 31<sup>st</sup> annual meeting of the Association for Behavior Analysis, Chicago, IL.

- \*Bailey, E. M., \*Ward, R. D., & Odum, A. L. (2005, May). *Differential effects of amphetamine and ethanol on variable and repetitive behavior*. Poster presented at the 31st annual meeting of the Association for Behavior Analysis, Chicago, IL.
- Shahan, T. A., Odum, A. L., & Cheney, C. (2005, May). *Utah State University: Behavior analysis training in the department of psychology*. Poster presented at the 31st annual meeting of the Association for Behavior Analysis, Chicago, IL.
- Odum, A. L., Shahan, T. A., \*\*Burke, K. A., & Nevin, J. A. (2004, August). *Resistance to change of forgetting functions*. In R. C. Pitts (Chair), *Celebrating B.F. Skinner's 100th birthday: Conditioned reinforcement*. Symposium conducted at the 112th annual meeting of the American Psychological Association, Honolulu, HI.
- Odum, A. L. (2004, May, Chair). *2004 ABA Tutorial: History of behavioral pharmacology*. Invited tutorial (Joseph V. Brady, presenter) at the 30th annual meeting of the Association for Behavior Analysis, Boston, MA.
- Odum, A. L. (2004, May, Chair). *Cocaine, dopamine transport inhibition, and discovery research on medical treatments for cocaine abuse*. Invited paper session (Jonathan L. Katz, presenter) at the 30th annual meeting of the Association for Behavior Analysis, Boston, MA.
- Odum, A. L. (2004, May, Chair). *Social stress experiences, neuroadaptations and cocaine binges*. Invited paper session (Klaus A. Miczek, presenter) at the 30th annual meeting of the Association for Behavior Analysis, Boston, MA.
- \*Ward, R. D., & Odum, A. L. (2004, May). *The effects of morphine on the discrimination of subject-produced and experimenter-imposed durations*. In C. D. L. Wynne (Chair), *A wrinkle in timing accounts: Effects of d-amphetamine and morphine*. Symposium conducted at the 30th annual meeting of the Association for Behavior Analysis, Boston, MA.
- \*Bailey, E. M., \*Ward, R. D., & Odum, A. L. (2004, May). *The effects of amphetamine on variable and repetitive behavior*. Poster presented at the 30th annual meeting of the Association for Behavior Analysis, Boston, MA.
- Shahan, T., Odum, A. L., & Cheney, C. (2004, May). *Utah State University: Behavior analysis training in the department of psychology*. Poster presented at the 30th annual meeting of the Association for Behavior Analysis, Boston, MA.
- Odum, A. L. (2003, August). *d-Amphetamine reinstates extinguished behavior previously maintained by food: Importance of context*. Poster presented at the 111th annual meeting of the American Psychological Association, Toronto, Canada.
- Odum, A. L. (2003, May, Chair). *Time and the behavioral effect of drugs*. Symposium presented at the 29th annual meeting of the Association for Behavior Analysis, San Francisco, CA.
- Odum, A. L. (2003, May, Chair). *Delta opioid receptor activation and depression: Any link to operant behavior?* Invited paper session (James H. Woods, presenter) at the 29th annual meeting of the Association for Behavior Analysis, San Francisco, CA.
- Odum, A. L., & \*Ward, R. D. (2003, May). *The effects of morphine on the production and discrimination of duration*. In A. L. Odum (Chair), *Time and the behavioral effect of drugs*. Symposium conducted at the 29th annual meeting of the Association for Behavior Analysis, San Francisco, CA.
- \*Barnes, C. A., \*Ward, R. D., & Odum, A. L. (2003, May). *Investigating the differential resistance of sequence variability and stereotypy*. Poster presented at the 29th annual meeting of the Association for Behavior Analysis, San Francisco, CA.
- \*\*Martin, J. F., \*Ward, R. D., & Odum, A. L. (2003, May). *The effects of d-amphetamine and haloperidol on timing assessed by two different methods*. Poster presented at the 29th annual meeting of the Association for Behavior Analysis, San Francisco, CA.
- \*Ward, R. D., & Odum, A. L. (2003, May). *The effects of retention intervals on the production and discrimination of interresponse times*. Poster presented at the 29th annual meeting of the Association for Behavior Analysis, San Francisco, CA.

- Odum, A. L. (2002, May, Chair). *Recent issues in delay discounting*. Symposium presented at the 28th annual meeting of the Association for Behavior Analysis, Toronto, Canada.
- Odum, A. L., \*\*Milo, J. S., Shahan, T. A., & Nevin, J. A. (2002, May). *Resistance to change of response rates and remembering: Disruption by extinction and retention interval*. In M. Perone (Chair), *Resistance to change*. Symposium conducted at the 28th annual meeting of the Association for Behavior Analysis, Toronto, Canada.
- Odum, A. L., & \*\*Patrakis, C. M. (2002, May). *Discounting of delayed hypothetical alcohol, food, and monetary outcomes*. In A. L. Odum (Chair), *Recent issues in delay discounting*. Symposium conducted at the 28th annual meeting of the Association for Behavior Analysis, Toronto, Canada.
- \*Barnes, C. A., & Odum, A. L. (2002, May). *The effects of travel requirements on behavioral variability and stereotypy*. Poster presented at the 28th annual meeting of the Association for Behavior Analysis, Toronto, Canada.
- \*\*Burke, K. A., & Odum, A. L. (2002, May). *The effects of delayed reinforcement on variability and repetition maintained by chained schedules*. Poster presented at the 28th annual meeting of the Association for Behavior Analysis, Toronto, Canada.
- \*\*Martin, J. F., & Odum, A. L. (2002, May). *The effects of morphine on timing assessed by two different methods of measurement*. Poster presented at the 28th annual meeting of the Association for Behavior Analysis, Toronto, Canada.
- \*Mower, C., & Odum, A. L. (2002, May). *Morphine produces the choose short effect*. Poster presented at the annual meeting of the Society for the Quantitative Analysis of Behavior, Toronto, Canada.
- \*Mower, C., \*\*Milo, J. S., & Odum, A. L. (2002, May). *The effects of morphine on the production and discrimination of interresponse times: Replication and extension*. Poster presented at the 28th annual meeting of the Association for Behavior Analysis, Toronto, Canada.
- Odum, A. L., & Shahan, T. A. (2002, May). *Graduate study in behavior analysis at the University of New Hampshire*. Poster presented at the 28th annual meeting of the Association for Behavior Analysis, Toronto, Canada.
- \*Barnes, C. A., & Odum, A. L. (2001, October). *Effects of travel requirements on response variability: A test of two theories*. Poster presented at the 18th annual meeting of the Southeastern Association for Behavior Analysis, Wilmington, NC.
- \*\*Martin, J. & Odum, A. L. (2001, October). *The effects of morphine on timing assessed by two different methods of measurement*. Poster presented at the 18th annual meeting of the Southeastern Association for Behavior Analysis, Wilmington, NC.
- \*Mower, C., \*\*Milo, J. S., & Odum, A. L. (2001, October). *The effects of morphine on the production and discrimination of interresponse times*. Poster presented at the 18th annual meeting of the Southeastern Association for Behavior Analysis, Wilmington, NC.
- Odum, A. L., & Shahan, T. A. (2001, October). *Graduate study in behavior analysis at the University of New Hampshire*. Poster presented at the 18th annual meeting of the Southeastern Association for Behavior Analysis, Wilmington, NC.
- Odum, A. L. (2001, May, Chair). *Current trends in drug tolerance research*. Paper session presented at the 27th annual meeting of the Association for Behavior Analysis, New Orleans, LA.
- \*Barnes, C. A., \*\*DeHaven, C., & Odum, A. L. (2001, May). *Effects of delayed reinforcement on operant variability and stereotypy*. Poster presented at the 27th annual meeting of the Association for Behavior Analysis, New Orleans, LA.
- \*\*Milo, J. S., Odum, A. L., Shahan, T. A., & Nevin, J. A. (2001, May). *Resistance to change of response rates and remembering*. Poster presented at the 27th annual meeting of the Association for Behavior Analysis, New Orleans, LA.

- Odum, A. L., Mitchell, S. H., & Shahan, T. A. (2001, May). *Graduate study in behavior analysis at the University of New Hampshire Department of Psychology*. Poster presented at the 27th annual meeting of the Association for Behavior Analysis, New Orleans, LA.
- Odum, A. L., & Shahan, T. A. (2001, May). *d-Amphetamine reinstates extinguished behavior previously maintained by food*. Poster presented at the 27th annual meeting of the Association for Behavior Analysis, New Orleans, LA.
- \*\*DeHaven, C., & Odum, A. L. (2000, October). *Effects of delayed reinforcement on response variability*. Poster presented at the 17th annual meeting of the Southeastern Association for Behavior Analysis, Chattanooga, TN.
- \*\*Milo, J. S., Odum, A. L., Shahan, T. A., & Nevin, J. A. (2000, October). *Resistance to change of response rates and remembering*. Poster presented at the 17th annual meeting of the Southeastern Association for Behavior Analysis, Chattanooga, TN.
- Odum, A. L. (2000, May, Chair). *Timing, tolerance, and tough discriminations: Recent investigations in behavioral pharmacology*. Symposium presented at the 26th annual meeting of the Association for Behavior Analysis, Washington, DC.
- Odum, A. L., \*\*Murray, L. M., & Schaal, D. W. (2000, May). *Timing and the effects of drugs on temporally organized behavior*. In A. L. Odum (Chair), *Timing, tolerance, and tough discriminations: Recent investigations in behavioral pharmacology*. Symposium conducted at the 26th annual meeting of the Association for Behavior Analysis, Washington, DC.
- Odum, A. L., Mitchell, S. H., & Shahan, T. A. (2000, May). *Graduate study in behavior analysis at the University of New Hampshire Department of Psychology*. Poster presented at the 26th annual meeting of the Association for Behavior Analysis, Washington, DC.
- \*\*Murray, L. M., Odum, A. L., & Schaal, D. W. (1999, October). *The effects of d-amphetamine: Changes in temporal discrimination or rate-dependency?* Poster presented at the 16th annual meeting of the Southeastern Association for Behavior Analysis, Columbia, SC.
- Odum, A. L., & Roll, J. M. (1999, August, Co-Chairs). *Substance abuse and impulsivity: Delay discounting investigations*. Symposium presented at the 107th annual meeting of the American Psychological Association, Boston, MA.
- Odum, A. L., Bickel, W. K., & Madden, G. J. (1999, August). *Delay discounting in current, former, and nonsmokers of cigarettes*. In A. L. Odum and J. M. Roll (Co-chairs), *Substance abuse and impulsivity: Delay discounting investigations*. Symposium conducted at the 107th annual meeting of the American Psychological Association, Boston, MA.
- Odum, A. L., Bickel, W. K., & Madden, G. J. (1999, June). *Current cigarette smokers are more impulsive than never and ex-smokers*. Poster presented at the 61st annual meeting of the College on Problems of Drug Dependence, Acapulco, Mexico.
- \*\*Murray, L. M., Schaal, D. W., & Odum, A. L. (1999, May). *Effects of morphine on chained schedule performance in pigeons*. In D. W. Schaal (Chair), *Abused drugs and temporally organized operant behavior*. Symposium conducted at the 25th annual meeting of the Association for Behavior Analysis, Chicago, IL.
- Odum, A. L., \*Johnson, J. L., \*\*Murray, L. M., & Schaal, D. W. (1999, May). *Effects of d-amphetamine: Changes in temporal discrimination or rate-dependency?* In D. W. Schaal (Chair), *Abused drugs and temporally organized operant behavior*. Symposium conducted at the 25th annual meeting of the Association for Behavior Analysis, Chicago, IL.
- Odum, A. L., Madden, G. J., & Bickel, W. K. (1999, May). *Delay discounting and risky drug injection*. In J. M. Roll (Chair), *Contemporary issues in human behavioral pharmacology: Laboratory studies*. Symposium conducted at 25th annual meeting of the Association for Behavior Analysis, Chicago, IL.
- \*Johnson, J. L., Odum, A. L., & Schaal, D. W. (1998, October). *The effects of morphine on behavior maintained by fixed-interval and clocked fixed-interval schedules*. Poster presented at the 15th annual meeting of the Southeastern Association for Behavior Analysis, Asheville, NC.

- \*\*Murray, L. M., Odum, A. L., & Schaal, D. W. (1998, October). *The effects of morphine on chained schedule performance in pigeons*. Poster presented at the 15th annual meeting of the Southeastern Association for Behavior Analysis, Asheville, NC.
- Parker, B. K., Odum, A. L., \*Carlin, L. A., & \*\*Murray, L. M. (1998, October). *Differential outcomes and delayed matching to sample: Effects of conditioned reinforcement*. Poster presented at the 15th annual meeting of the Southeastern Association for Behavior Analysis, Asheville, NC.
- Schaal, D. W., & Odum, A. L. (1998, August). *Issues raised by the effects of drugs on performance under fixed-interval schedules*. In R. C. Pitts (Chair), *Current research in behavioral pharmacology*. Symposium conducted at the 106th annual meeting of the American Psychological Association, San Francisco, CA.
- Odum, A. L. (1998, May, Chair). *Stimulus-reinforcer relations and operant behavior*. Symposium presented at the 24th annual meeting of the Association for Behavior Analysis, Orlando, FL.
- Odum, A. L., & Schaal, D. W. (1998, May). *Remembering brief signals of delayed reinforcement*. In A. L. Odum (Chair), *Stimulus-reinforcer relations and operant behavior*. Symposium conducted at the 24th annual meeting of the Association for Behavior Analysis, Orlando, FL.
- \*Johnson, J. L., Odum, A. L., & Schaal, D. W. (1998, May). *The effects of morphine on behavior maintained by fixed interval and clocked fixed interval schedules: A preliminary report*. Poster presented at the annual meeting of the Behavioral Toxicology Society, Durham, NC.
- \*Knealing, T. W., Odum, A. L., & Schaal, D. W. (1998, May). *The effects of morphine on temporally organized behavior*. Poster presented at the annual meeting of the Behavioral Toxicology Society, Durham, NC.
- Odum, A. L., \*\*Sorrell, J. T., & Schaal, D. W. (1998, May). *The effects of morphine on fixed interval patterning and independently assessed temporal discrimination*. Poster presented at the annual meeting of the Behavioral Toxicology Society, Durham, NC.
- Odum, A. L., & Schaal, D. W. (1997, November). *The effects of morphine on temporal patterning of responses and temporal discrimination*. Poster presented at the 13th annual meeting of the West Virginia Neuroscience Society, Morgantown, WV.
- Odum, A. L., & Schaal, D. W. (1997, October). *Are morphine-produced changes in fixed-interval patterning accompanied by changes in temporal discrimination?* Poster presented at the 14th annual meeting of the Southeastern Association for Behavior Analysis, Chapel Hill, NC.
- Odum, A. L., & Schaal, D. W. (1997, May). *Response maintenance and briefly-signaled delayed reinforcement: Brief stimulus function*. In T. A. Shahan (Chair), *Factors in response persistence with delayed reinforcement*. Symposium conducted at the 23rd annual meeting of the Association for Behavior Analysis, Chicago, IL.
- Schaal, D. W. & Odum, A. L. (1997, May). *Mechanisms that may underlie drug-induced increases in response rates under periodic reinforcement conditions*. In G. J. Madden (Chair), *Recent contributions of the experimental analysis of behavior to psychopharmacology*. Symposium conducted at the 23rd annual meeting of the Association for Behavior Analysis, Chicago, IL.
- Odum, A. L., & Schaal, D. W. (1996, December). *Effects of morphine on operant behavior under internal and external stimulus control*. Poster presented at the 12th annual meeting of the West Virginia Neuroscience Society, Morgantown, WV.
- Odum, A. L., & Schaal, D. W. (1996, November). *Morphine's effects on pecking maintained by fixed-interval and fixed-interval clock schedules*. Poster presented at the 13th annual meeting of the Southeastern Association for Behavior Analysis, Wilmington, NC.
- Odum, A. L., & Schaal, D. W. (1996, June). *Key pecking of pigeons under variable-interval schedules of briefly signaled delayed reinforcement*. In R. Avila S. & C. A. Bruner Iturbide, (Co-Chairs), *Estudios parametricos sobre adquisicion y mantenimiento bajo demora de reforzamiento*. Symposium conducted at the 13th annual Mexican Congress of Behavior Analysis and 1st annual Interamerican and Iberoamerican Congress of Behavior Analysis, Boca del Rio and Vera Cruz, Mexico.

- Odum, A. L., & Schaal, D. W. (1996, May). *Signal-food relations under conditions with briefly signaled delayed reinforcement*. In D. W. Schaal (Chair), *Acquisition and maintenance of operant behavior with delayed reinforcement*. Symposium conducted at the 22nd annual meeting of the Association for Behavior Analysis, San Francisco, CA.
- \*\*Haworth, S. C., Odum, A. L., & Schaal, D. W. (1995, November). *Food deprivation and morphine: Effects on key pecking under a multiple fixed-ratio fixed-interval schedule of food reinforcement*. Poster presented at the 12th annual meeting of the Southeastern Association for Behavior Analysis, Charleston, SC.
- Crosbie, J., \*Reilly, M., & Odum, A. L. (1995, May). *Direct and indirect effects of response cost on topographically dissimilar responses*. In C. Hughes, (Chair), *Ubiquity of aversive control*. Symposium conducted at the 21st annual meeting of the Association for Behavior Analysis, Washington, DC.
- Odum, A. L., & Schaal, D. W. (1995, May). *Interactions of deprivation levels and morphine: Effects on key-pecking of pigeons under a multiple fixed-ratio fixed-interval schedule of food reinforcement*. Poster presented at the 21st annual meeting of the Association for Behavior Analysis, Washington, DC.
- Schaal, D. W., \*Miller, M. A., Odum, A. L., & \*Berberich, L. (1994, May). *Effects of interactions of deprivation levels with cocaine on key pecking of pigeons under multiple fixed-ratio fixed-interval schedules of food reinforcement*. Poster presented at the 20th annual meeting of the Association for Behavior Analysis, Atlanta, GA.

## TEACHING EXPERIENCE

### UTAH STATE UNIVERSITY

- 2003 - present Analysis of Behavior: Advanced, with pigeon laboratory  
 2006 – 2008 Drugs and Behavior  
 2007 – present Behavioral Pharmacology (graduate)  
 2011 – present Conceptual and Methodological Foundations of Behavior Analysis (graduate)

### UNIVERSITY OF NEW HAMPSHIRE

- 1999 - 2003 Addiction and Behavior  
 Single Subject Research Methods (graduate)  
 Behavior Analysis and its Applications  
 Behaviorism, Culture, and Contemporary Society  
 Introduction to Behavior Analysis  
 Research Methods in Psychology

### UNIVERSITY OF VERMONT

- 1999 Learning (co-instructor)

### ST. MICHAEL'S COLLEGE

- 1999 Learning, with rat laboratory (co-instructor)

### WEST VIRGINIA UNIVERSITY

- 1993 - 1996 Introduction to Social Psychology  
 Principles of Behavior and Learning (rat laboratory)

## UNIVERSITY SERVICE

- 2012 – 2014 Psychology Faculty Search Committee, Price Campus Position, USU  
 2009 Psychology Faculty Search Committee, Behavior Analysis Position, USU  
 2008 - 2009 Psychology Department Head Search Screening Committee, USU

- 2008 - 2009 University Retention Task Force Committee, USU  
 2008 – present Pre-Medical Student Evaluation Committee Member, USU  
 2008 Selection Committee for USU Researcher of the Year  
 2008 Psychology Faculty Search Committee, Snow College Position, USU  
 2007 - 2009 Connections Panel Member (program for new undergraduate students), USU  
 2004 - present Behavior Analysis Graduate Emphasis Steering Committee, USU  
 2004 - 2013 Undergraduate Program Steering Committee, USU  
 Chair, 2007 - 2013  
 2004 Thesis proposal review for College of Education & Human Services, USU  
 2004 - present Director, Undergraduate Psychology Animal Laboratory Facility, USU  
 2002 Undergraduate Honors Liaison, Department of Psychology,  
 University of New Hampshire  
 2001 - 2002 McNair Graduate Opportunity Program Faculty Mentor, UNH  
 2001 Summer Undergraduate Research Fellowship (SURF) Faculty Mentor, UNH  
 2000 - 2003 Institutional Animal Care and Use Committee (IACUC), UNH  
 2000 - 2003 Liberal Arts Honors Committee, UNH  
 2000 - 2003 Undergraduate Program Development and Operations Committee (UPDOC), UNH  
 Chair, 2001 - 2003  
 2000 - 2001 History of Psychology Faculty Search Committee, Department of Psychology, UNH  
 1999 - 2000 Graduate Program Development and Operations Committee (GRAPDOC), UNH  
 1999 - 2000 Proseminar organizer for first year graduate students, UNH  
 1997 - 1998 Student member of Full Faculty Committee, West Virginia University  
 1996 - 1997 Student member of Behavior Analysis Training Committee (BATC), WVU  
 1994 - 1995 Student member of Laboratory Animal Board (LAB), WVU

### MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

- American Psychological Association (Divisions 25 & 28)  
 Association for Behavior Analysis International  
 Society for the Quantitative Analysis of Behavior

### PROFESSIONAL SERVICE

- 2008 – present Society for the Experimental Analysis of Behavior (SEAB)  
 President, 2013 – 2015  
 Vice President, 2011 – 2013  
 Board of Directors, 2008 – 2016  
 2008 – 2011 Science Board, Association for Behavior Analysis International  
 2006 – 2015 American Psychological Association, Div. 25  
 President, 2014 – 2015  
 Elections Chair, 2010 – 2011  
 Member at Large, 2008 – 2011  
 Chair, Basic Research Dissertation Award Committee, 2006  
 2003 – present Board of Trustees, Cambridge Center for Behavioral Studies  
 2002 – present National Institutes of Health Study Section *ad hoc* member  
 Adult Psychopathology and Disorders of Aging (APDA)  
 Biobehavioral Regulation, Learning and Ethology (BRLE)  
 Child Psychopathology and Developmental Disabilities (CPDD)  
 Special Emphasis panel member  
 Basic Research on Decision Making:  
 Cognitive, Affective, and Developmental Perspectives  
 2002 - 2005 Area Coordinator, Behavioral Pharmacology Program,



2001 - 2003 Meeting of the Association for Behavior Analysis International  
Board of Directors, Southeastern Association for Behavior Analysis (SEABA)

## EDITORIAL EXPERIENCE

Editor *Journal of the Experimental Analysis of Behavior* (2015 – present)

Associate Editor *Journal of the Experimental Analysis of Behavior* (2007 – 2010)

Guest Editor *Behavioural Processes* –

Special Issue on Animal Timing (2005)

*Journal of the Experimental Analysis of Behavior* –

Special Issue on Delay Discounting (2014)

Editorial Board *Behavioural Pharmacology* (2009 – present)

*Behavioural Processes* (2005 – present)

*Journal of the Experimental Analysis of Behavior*

(2001 – 2004; 2006 – 2007; 2013 – 2015)

*Learning & Behavior* (2015 – present)

*The Behavior Analyst* (2004 – 2006)

*The Psychological Record* (2013 – present)

### Ad Hoc Reviewer

- *Addiction*
- *Addiction Biology*
- *Alcoholism: Clinical and Experimental Research*
- *American Journal of Drug and Alcohol Abuse*
- *Animal Cognition*
- *Behavior Res. Methods, Instruments, & Computers*
- *Behavioural Pharmacology*
- *Behavioural Processes*
- *Cognitive, Affective, & Behavioral Neuroscience*
- *Comparative Cognition & Behavior Reviews*
- *Drug and Alcohol Dependence*
- *Emotion*
- *Experimental Analysis of Human Behavior Bulletin*
- *Experimental and Clinical Psychopharmacology*
- *European Journal of Behaviour Analysis*
- *Health Psychology*
- *International Journal of Comparative Psychology*
- *Journal of Abnormal Psychology*
- *Journal of Affective Disorders*
- *Journal of Applied Behavior Analysis*
- *Journal of Behavioral Decision Making*
- *Journal of the Experimental Analysis of Behavior*
- *Journal of Substance Abuse Treatment*
- *Learning & Behavior*
- *Learning & Motivation*
- *Mexican Journal of Behavior Analysis*
- *Nicotine & Tobacco Research*
- *Pharmacology, Biochemistry, & Behavior*
- *PLoS Computational Biology*
- *PLoS One*
- *Psychological Medicine*
- *Psychological Record*
- *Psychological Science*
- *Psychology of Addictive Behaviors*
- *Psychopharmacology*
- *Psychonomic Bulletin & Review*
- *Quarterly Journal of Experimental Psychology*
- *Swiss Journal of Psychology*
- *The Behavior Analyst*
- *Time & Society*
- *Timing & Time Perception*