

**CURRICULUM VITAE**  
**M. Christopher Newland**

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**Faculty Appointments**

Alumni Professor		2001 to Present
Professor	Department of Psychology	1998 to Present
Associate Professor with tenure.	Auburn University	1991-1998
Assistant Professor		1988-1991
Research Associate	Environmental Health Sciences, University of Rochester School of Medicine	1987 - 1988

**Postdoctoral Fellowships**

National Research Service Award (National Institute of Alcohol Abuse and Alcoholism)	University of Rochester Environmental Health Sciences (now Environmental Medicine) School of Medicine and Dentistry Bernard Weiss, Ph.D., Sponsor	1984 - 1987
Training Fellowship (National Institute of Environmental Health Sciences)	University of Rochester Environmental Health Sciences (now Environmental Medicine) School of Medicine and Dentistry Bernard Weiss, Ph.D., Sponsor	1982 - 1984

**Graduate Education**

Ph.D. (1982)	Georgia Institute of Technology. Emphasis: Experimental Psychology Double Minor: Mathematics, Neurobiology Advisor: M. Jackson Marr, Ph.D.
M.S. (1979)	Georgia Institute of Technology. Emphasis: Experimental Psychology Advisor: M. Jackson Marr, Ph.D.

**Undergraduate Education**

B. E.E (1972)	Auburn University (Electrical Engineering).
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## Grants and Awards

Methylmercury and Calcium Homeostasis: Behavioral Effects. Subcontract (\$1,048,942/\$1,529,995 direct/indirect costs. 2008-2013) on grant entitled *Neurotoxicity of Mercury* (PI is Dr. William Atchison, Michigan State University).

Interaction of dietary omega-3 fatty acids and methylmercury on sensorimotor function, astrocytic activity, and glutamate transporters. Elaine Coleman, Anatomy, Physiology, Pharmacology, A. U. College of Veterinary Medicine, Co-Investigator. Auburn University Environmental Institute. \$80,000, 2002-2004.

Symposium on "*Perspectives in Behavioral Ecotoxicology*" at the Behavioral Toxicology Society Annual Meeting, Research Triangle Park, NC. Funded by U.S. EPA April, 2002.

Symposium on "*Transferring Technology Across Applications*" at the Behavioral Toxicology Society Annual Meeting, Research Triangle Park, NC, May 2001. Funded by Pfizer Pharmaceuticals and Rohm and Haas Corporation (\$3000).

Neurotoxicity of Methylmercury Across the Lifespan. National Institute of Environmental Health Sciences/National Institutes of Health. 2001-2006 Total costs: \$1,753,100

Assessing Sublethal Effects of Neurotoxic Substances in Fish: Development of a Model System for Laboratory Assessment. U.S. EPA. 2001-2003 Total Costs: \$67,000. Dennis Devries, co-investigator.

Behavioral Teratology of Methylmercury. National Institute of Environmental Health Sciences/National Institutes of Health. RO1-ES06466 \$316,993 total costs. 1995-1998.

Behavioral Teratology of Lead and Methylmercury in Squirrel Monkeys. Collaboration with Department of Environmental Hygiene, University of Lund, Sweden (Dr. Maths Berlin, Principal Investigator).

Caffeine-Induced Supersensitivity to Adenosine Agonists. National Institute of Drug Abuse. \$85,160 direct costs; \$117,104 total costs. 1990-1992.

Literature Review of Manganese Neurotoxicity. Auburn University Grant-in-Aid.

An experimental apparatus for taking analog measures of motor function in rodents. Auburn University Grant in Aid, 1989, \$2,845

Caffeine and adenosine interactions. Auburn University Grant in Aid, 1989.

Behavioral Toxicology of Methanol and Ethanol in Primates. National Institute of Alcoholism and Alcohol Abuse. National Research Service Award 1984-1987. \$68,736

Training grant from National Institute on Environmental Health Sciences. 1982-1984.

Research Assistantship, Behavioral Biology Laboratory, Yerkes Regional Primate Center, 1979. Larry D. Byrd, Ph.D., Director

Summer Research Fellowship, Neurophysiology Laboratory Yerkes Regional Primate Center, 1979. Adrian A. Perachio, Ph.D. Director

### **Consultation/collaborations**

Nerve Growth Factor Signaling. Principal Investigator: Marie Wooten, Biological Sciences, Auburn University. Funded by National Institute of Neurological Disorders and Stroke. My role is the oversight of cognitive testing in knockout and wild-type mice.

Interactive Effects of Perinatal Exposure to Methylmercury and Dietary Omega-3 Fatty Acids on the Development of Cardiovascular Disease. Funded by A.U. Experiment Station. Margaret Craig-Schmidt, PI. 2003-2005. 2003-2006 (\$120,000)

Developmental Effects of fish-borne toxicants in the rat. (5R01ES07921) Principal Investigator: Richard Seegal, Ph.D., Laboratory of Human Toxicology, New York State Dept. of Health. My role is the oversight of behavioral testing of adult rats exposed during gestation to combinations of PCB's and methylmercury.

Recovery and Help-Seeking Processes in Problem Drinkers. (5R01AA08972). Principal Investigator: Jalie A. Tucker, Ph.D. Department of Psychology, Auburn University, Auburn, AL. My role is the development of a quantitative description of the temporal patterns of drinking in adult alcoholics.

### **Outreach and Professional Activities.**

Advisory Panel to review scientific program of Neurotoxicology Division, Health and Environmental Effects Laboratory, U. S. Environmental Protection Agency, Research Triangle Park, NC. 27-29 March 2006.

Regular member of NAL (Neurotoxicology and Alcohol, formerly ALTOX3) Scientific Review Group ("Study Section") NIH 2003-2007.

Peer review of *Lead renovation, repair, and painting program rule-benefits* document for U.S. EPA.

Peer Reviewer (*ad hoc*) U.S. EPA./National Institute of Environmental Health Sciences Superfund Program. (Summer, 2005).

Member, Special Emphasis Panel (study section). NIH. Summer, Fall 2003.

*Ad hoc* member for ALTOX 3 Scientific Review Group (study section). NIH/NIEHS February, June 2003.

Behavioral Toxicology Society/Neurobehavioral Teratology Society. Invited participant and Breakout Group Leader (Data Analysis and Interpretation) in the two-day workshop on Behavioral Test Methods. (June, 2003)

NIH-NIEHS Scientific Review Group. Ad Hoc Panel to review R13 grant applications. (Fall, 2002).

NIH-NCRR Scientific Review Group conducting site visit of Resource Facility for Population Kinetics, U. of Washington. March, 2002.

Moderator: Open Forum on New Animal Use Policy Manual. Auburn University Animal Care and Use Committee. 31 July 2001.

Scientific reviewer: Internal competition for postdoctoral positions, Neurotoxicology Division, National Health and Environmental Effects Laboratory, U.S. EPA, Research Triangle Park, N.C. June, 2001.

Expert Panel on Reference Dose (RfD) Derivation for Methylmercury, U.S. Environmental Protection Agency. Washington, DC. November, 2000.

Scientific review of *Toxicological Profile for Manganese* prepared for the Agency for Toxic Substances and Disease Registry (ATSDR) of the Centers for Disease Control. November, 1998, revised and re-reviewed, 1999.

Mercury Subcommittee/Environmental Health Committee for the Science Advisory Board of the U.S. Environmental Protection Agency. Called to review the *Mercury Study Report to Congress*, a comprehensive, 1700 page review of mercury in the environment, and its health effects. 1997

Federal Advisory Panel to review scientific program of Neurotoxicology Division, Health and Environmental Effects Laboratory, U. S. Environmental Protection Agency, Research Triangle Park, NC. October 9-11, 1996.

Expert review of *Mercury Vapor Toxicology Update*. Sponsored by the Subcommittee on Dental Amalgam of the Public Health Services Environmental Health Policy Committee. Bethesda, Md., June 24, 1996,

"Workshop on Risk Assessment of Neurobehavioral Toxicity" held by the Committee on Toxicology of the National Research Council. Beckman Center, Irvine, California. Jan 18-19, 1995 (See "Invited Presentations" below)

Participation in U.S. Environmental Protection Agency Workshop on the Bioavailability and Oral Toxicity of Manganese. Cincinnati, OH, August 30-31, 1994. (See "Invited Presentations", below.)

Scientific review of *Toxicological Profile for Manganese*, prepared for the Agency for Toxic Substances and Disease Registry of the U. S. Public Health Service. 1994.

Scientific review of a comment submitted by the Environmental Defense Fund to the Environmental Protection Agency on a proposal to add manganese to gasoline. 1994

Comment submitted to Environmental Protection Agency on health consequences of adding manganese to gasoline (in response to application by Ethyl Corporation to do so), 1994.

Chair, Behavioral Toxicology Poster Session. Annual Meeting of the Society of Toxicology. New Orleans, March, 1993.

Workshop on the Toxicological Interpretation of Neurobehavioral Data. 18th Rochester Conference, Rochester, NY. June, 1992. B. Weiss, and J. O'Donoghue (organizers).

The health implications of adding manganese to gasoline. International workshop sponsored by U.S. Environmental Protection Agency and National Institute on Environmental Health Sciences. Chapel Hill, N.C. 1991

### **Current Research Activity**

Lifespan neurobehavioral toxicity of developmental methylmercury exposure.  
Analysis of behavior during transitions and in steady state.  
Effects of aquatic toxicants on foraging in fish.  
Computer-based instruction in psychopharmacology.

### **Research Interests**

Behavioral pharmacology and toxicology.	Drug and toxicant effects on learning.
Neuromotor effects of drugs and toxicants.	Quantification in behavior analysis
Experimental analysis of behavior.	

### **National Service**

President	Neurotoxicology Specialty Section, Society of Toxicology (3-year term ending in presidency, 2005-2008)
President	Southeastern Association of Behavior Analysis (2001-2002)
President	Behavioral Toxicology Society (2000-2001)
Board of Directors	Southeastern Association for Behavior Analysis (SEABA)
Program chair	Southeastern Association for Behavior Analysis (1998-1999)
Councilor:	Neurotoxicology Specialty Section, Society of Toxicology

### **Board of Editors**

*Associate Editor, Neurotoxicology, 2007 - present*  
*NeuroToxicology (1995 - present)*  
*Neurotoxicology and Teratology (1996 - present)*  
*Journal of the Experimental Analysis of Behavior 1999-2002, 2004-2007*  
*The Behavior Analyst. (1996-1998)*

### Guest Editor

*Toxicology and Applied Pharmacology*  
*Psychopharmacology*  
*Zebrafish*  
*Fundamental and Applied Toxicology*  
*Neurobehavioral Toxicology and Teratology*  
*Toxicology Letters*  
*Pharmacology, Biochemistry, and Behavior*  
*The Behavior Analyst*  
*Physiology and Behavior*  
*Toxicological Sciences*  
*Experimental and Clinical Psychopharmacology*  
*Neuropharmacology*  
*Science of the Total Environment*  
*Brain*

### Professional Memberships

Association for Behavior Analysis  
Society of Toxicology (Full Member)  
Behavioral Toxicology Society  
Sigma Xi  
Southeastern Association for Behavior Analysis  
American Association of University Professors

### University Service

Member	Auburn University <i>Provost</i> Search Committee (2008)
Member	Auburn University <i>Veterinarian</i> Search Committee (2008)
Member	Alumni Professor Selection Committee (2006-2008)
Director	Graduate Program in Experimental Psychology, 1993 – 1997, 2005-present.
Member	Outside committee member of Nutrition and Food Science Faculty Search Committee. 2004
Member	<i>Ad Hoc</i> subcommittee of IACUC to review health status of a dog with a rare muscular dystrophy gene.
Member	Auburn Chamber Music Society Board (2003-present)
Member	Auburn University Environmental Institute Executive Board (2002-2005)
Member	Sigma Xi Executive Board (2001-2002 )
Member	Institutional Animal Care and Use Committee. 1992-1995, 1999- 2006
Moderator	Auburn Institutional Animal Care and Use Committee Policy Forum. July, 2001.
Member	Graduate Curriculum Committee (1989-1990, 1998-2000)
Chair	Graduate Curriculum committee (1996-1998)

### University Service

Member	Auburn University Environmental Institute Speakers Committee (1997-1999)
Member	College of Liberal Arts Technology Committee, 1993 - 1996
Member	Graduate Core Curriculum Oversight Committee. 1993 - 1995
Member	Department of Psychology Executive Committee, 1993 - 1997
Member	Faculty Merit Evaluation Committee. 1993, 1996
At large Rep	Auburn University Sigma Xi 1997-1998.
Member	<i>Ad hoc</i> committee to recruit a department chair 1992-1993.
Chair	Space Committee, 1991-1993.
Member	Biomedical Research Support Grant review committee, Auburn University, 1991-1994
Member	College of Liberal Arts Self-Study Steering Committee and Chair of Research and Facilities Subcommittee of a Ad Hoc Committee to prepare for the Southeastern Association of Colleges and Schools (SACS) accreditation visit in 1992.
Member	Undergraduate Curriculum Committee
Member	Interdepartmental committee for Toxicology Training at Auburn University. 1988-1990
Member	Interdepartmental committee to develop a Neuroscience Program at Auburn University. 1988-1990
Chair	Biopsychology Search Committee, 1989, 1997-1998, 2006
Chair	Colloquium Committee (1988-1990)

### Teaching Experience

#### Auburn University–Undergraduate

Behavioral Neuroscience  
Drugs and Behavior  
Quantitative Methods  
Sensation and Perception  
Learning

#### Auburn University–Graduate

Context and Consequences of Behavior  
Biological Bases of Behavior  
Behavioral Pharmacology  
Ethics and Problems of Professional and Scientific Psychology  
Behavioral Effects of Environmental Contaminants  
Behavioral Effects of Chemical Exposure During Development  
Seminar: Neurobehavioral Toxicity of Methylmercury

Sensation and Perception (1/2 qtr of a graduate core course)  
Physiological Psychology  
Advanced Experimental Methods  
Seminar: Quantitative Models of Behavior Change  
Current Theories in the Experimental Analysis of Behavior.

**University of Rochester (all graduate courses):**

Toxicology Core Course, Lectures on Manganese Toxicity.  
Neurotoxicology Laboratory: Human Assessment  
Behavioral Toxicology Laboratory: Animal Models  
Behavioral Effects of Environmental Contaminants.  
Introduction to Behavioral Pharmacology  
Basic Toxicology, Lectures on Behavioral Toxicology

**Georgia Institute of Technology (undergraduate courses):**

General Psychology  
Experimental Psychology Lab  
Proseminar in Psychology, Graduate Lab

**Spelman/Morehouse College**

Laboratory in Experimental Psychology: Conditioning and Learning  
Laboratory in Experimental Psychology: Sensation and Perception

**Ph.D. Students Graduated**

- |                            |   |
|----------------------------|---|
| Rebecca Adcock.            | <ul style="list-style-type: none"><li>○ Caffeine consumption in young adults: measurement and determinants of self-administration.</li><li>○ Graduated, 1995.</li><li>○ Current position: Rehabilitation Psychologist, Jim Thorpe Rehabilitation Hospital.</li></ul>  |
| Scott Kollins              | <ul style="list-style-type: none"><li>○ Stimulus properties of methylphenidate in children diagnosed with attention deficit hyperactivity disorder (ADHD): Discriminable and behavioral correlates. (Co-directed with Steve Shapiro of the Child Clinical Psychology program)</li><li>○ APA Dissertation Award, 1997</li><li>○ Graduate Dean's Award for Excellence, 1997</li><li>○ Current position: Assistant Professor, Psychiatry, Duke University School of Medicine</li></ul> |
| Erin Rasmussen<br>(Miller) | <ul style="list-style-type: none"><li>○ Effects of acute alcohol exposure on behavior suppressed by point-loss in humans.</li><li>○ Elected one of the top 10 graduate students at Auburn University Feb, 2000.</li><li>○ Graduated Winter, 2001.</li><li>○ Current Position: Associate professor, Idaho State University</li></ul>   |

### **Ph.D. Students Graduated**

- Tracy Zinn
- Development of a hierarchy of drug classes through a stimulus equivalence procedure.
  - Presidential scholar.
  - Graduated Summer, 2002. (Speciality in I/O Psychology)
  - Current position: Assistant professor, James Madison University.
- Jeffrey Langston
- The assessment of preference for qualitatively different reinforcers in canines: A comparison of reinforcer efficacy using behavioral economic procedures and progressive ratio schedules.
  - Graduated Spring, 2002
  - Current position: National Research Council Postdoctoral Fellow. U.S. Army Research Institute of Chemical Defense.
- Elliott Paletz
- Behavioral effects of combined exposure to methylmercury and fish oil containing essential fatty acids.
  - Graduated Winter, 2004
  - Current position: Postdoctoral fellow. Department of Psychiatry, University of Wisconsin.
- Wendy Donlin
- The percentile IRT schedule: High rate behavior as a tool for examining the toxic motor effects of methylmercury exposure.
  - Graduated Summer, 2005.
  - Current position: Assistant Professor. Department of Psychology. University of North Carolina at Wilmington
- Michael Magoon
- Response-consequence contingency discriminability when positive and negative reinforcement compete in concurrent schedules. (Co-directed with Dr. Thomas Critchfield, Illinois State University).
  - Graduated, Winter, 2005
  - APA Dissertation Award 2006.
  - Currently employed at Booz Allen Hamilton in Atlanta.
- Miranda Reed
- Effects of Dopamine Challenges on Clocked Fixed-Interval Schedule Performance for Rats Prenatally Exposed to Methylmercury and Selenium
  - Graduated Spring, 2007
  - Current position: Postdoctoral Fellow, Neurology and Neuroscience. University of Minnesota.
- Kelly Banna
- Drug Effects on Behavior in Transition: Does Context Matter?
  - Graduated Summer, 2007
  - Current position: Postdoctoral Fellow, Neuroscience Institute, Medical University of South Carolina

### **Major Area Papers Directed**

### **Major Area Papers Directed**

- Scott Kollins      Conceptual Issues Surrounding the Diagnoses of Behavioral Disorders: Lessons from ADHD. (1996)
- Phyllis A. Reile.      Behavior in Transition: Requirements, Determinants, and Quantification. (1999)
- Erin B. Rasmussen.      Issues in Conceptualizing Animal Welfare and Psychological Well Being of Animals in Captivity: The Relevance of Experimental Psychology (2000)
- Elliott Paletz      Quantification of Concurrent Schedule Responding: Mechanics and Dynamics (2000).
- Jeffrey Langston      Some necessary and sufficient conditions for the establishment and maintenance of complex response units: The role of discriminative stimuli, conditioned reinforcers, and contingencies (2001).

### **Masters Theses Directed**

- Leida Barrios      Discriminative stimulus properties of MDMA and structurally related compounds (1992: co-director with Randall Clark, Pharmacal Sciences, Auburn University.)
- Rebecca Adcock.      Normative Caffeine use in adults: Self-report of consumption and related events. 1992.
- Ken Brown      Adjunctive consumption of caffeine in rodents. 1993.
- Jeffrey Langston      Effects of prenatal methylmercury exposure on the acquisition and maintenance of a glutamate-based drug discrimination  
Sigma Xi Outstanding Thesis Award, 1998
- Erin (Miller) Rasmussen      Effects of prenatal methylmercury exposure on DRH performance: A systematic replication. (1999)
- Tracy Zinn      Stimulus equivalence in the teaching of drug terminology (2000).
- Wendy Donlin      Operant licking as a behavioral baseline for neurotoxicity (2002)
- Kelly Banna      A laboratory model of aquatic toxicology: foraging by bluegill (2005)
- John Heath      Development of flicker fusion to evaluate effects of chronic exposure of methylmercury. (2004)
- Miranda Reed      Effects of drug challenges on lever-pressing under a fixed interval schedule in rats prenatally exposed to methylmercury. (2004)

### Outside Reader for Doctoral Dissertations

- David Schreibman. Automatic parallel code generation for neural network simulation. Department of Computer Science. Auburn University.
- Eleanor Josephson. Anatomic pathways between limbic and olfactory systems. Department of Anatomy. College of Veterinary Medicine. Auburn University. Directed by Donald Buxton, Ph.D.
- Jared Lisonbee. Teacher-child relationships and preschool children's cortisol fluctuations. Human Development and Family Services. Directed by Jacquelyn Mize, Ph.D.

### Peer-Reviewed Papers

- Donlin, W.D. and Newland, M.C. (under review) The effects of chronic methylmercury and selenium on the acquisition of high-rate behavior in the rat.
- Newland, M.C., Paletz, E.M., Reed, M.R. (under review) Methylmercury and nutrition: Adult effects of fetal exposures in animal models.
- Weiss B, Cory-Slechta D, Gilbert SG, Mergler D, Miller E, Miller C, Newland MC, Rice D and Schettler T The new tapestry of risk assessment. *NeuroToxicology In Press, Accepted Manuscript.*
- Rasmussen, E.B. and Newland, M.C. (under review) Quantification of alcohol's antipunishment effects using the generalized matching relation.
- Banna, K.M., and Newland, M.C. (under review) The acquisition of choice.
- Rasmussen, E.B. and Newland, M.C. (2008) Asymmetry of reinforcement and punishment in human choice. *Journal of the Experimental Analysis of Behavior*, **89**, 157-167.
- Reed, M. N., Banna, K. M., Donlin, W. D., & Newland, M. C. (2008). Effects of gestational exposure to methylmercury and dietary selenium on reinforcement efficacy in adulthood. *Neurotoxicology and Teratology*, **30**, 29-37.
- Paletz, E. M., Day, J. J., Craig-Schmidt, M. C., & Newland, M. C. (2007). Spatial and visual discrimination reversals in adult and geriatric rats exposed during gestation to methylmercury and n - 3 polyunsaturated fatty acids. *NeuroToxicology*, *28*(4), 707-719.
- Reed, M.N. and Newland, M.C. (2007) Prenatal methylmercury exposure increases responding under clocked and unclocked fixed interval schedules of reinforcement. *Neurotoxicology and Teratology*, **29**, 492-502

- Newland, M.C., Reed, M.N., LeBlanc, A., Donlin, W.D. (2006) Brain and blood mercury and selenium after chronic and developmental exposure to methylmercury. *Neurotoxicology*, **27**, 710-720
- Reed, M.N., Paletz, E.M., Newland, M.C. (2006) Gestational exposure to methylmercury and selenium: Effects on a spatial discrimination reversal in adulthood. *Neurotoxicology*. **27**, 721-732
- Paletz, E.M., Craig-Schmidt, M.C., Newland, M.C. (2006) Gestational exposure to methylmercury and *n*-3 fatty acids: Effects on high- and low-rate operant behavior in adulthood. *Neurotoxicology and Teratology*, **28**, 59-73.
- Day, J.J., Reed, M.N., Newland, M.C. (2005) Neuromotor Deficits and Mercury Concentrations in Rats Exposed to Methylmercury and Fish Oil. *Neurotoxicology and Teratology*, **27**, 629-642
- Newland, M.C., Reile, P.A., Sartin, E.A., Hart, M., Craig-Schmidt, M.C., Mandel, I., Mandel, N. (2005) Urolithiasis in rats consuming a *dl* bitartrate form of choline in the AIN-93 Purified Diet. *Comparative Medicine*, **55**, 353-366
- Skikker, W, Acuff, K, Boyes, W.K., Chelonis, J, Crofton, K.M., Dearlove, G.E. Li, A, Moser, V.C., Newland, M.C., Rossi, J, Schantz, S., Sette, W., Sheets, L., Stanton, M., Tyl, S., Sobotka, T.J. (2005). Behavioral test methods workshop. *Neurotoxicology and Teratology*. **27**, 417-127.
- Nusbaum, K.E., Banna, K.M., Newland, M.C., Newton, J.C. (2005). Fin plaques and hair-like structures on wild-caught bluegill fish (*Lepomis macrochirus*). *Lab Animal*, **34**, 2-4.
- Newland, M.C., Reile, P.A., Langston, J.L.(2004) Gestational exposure to methylmercury retards choice in transition in aging rats. *Neurotoxicology and Teratology*. **26**, 179-194
- Newland, M.C. and Rasmussen, E.B. (2003) Behavior in adulthood and during aging is affected by contaminant exposure *in utero*. *Current Directions in Psychological Science*, **24**, 212-217.
- Reprinted in L. S. Liben (Ed) *Current Directions in Developmental Psychology: Readings form the Association for Psychological Science*. (Boston: Pearson Press, 2009)
- Critchfield, T.S., Paletz, E.M., MacAleese, K.R., and Newland, M.C. (2003). Punishment in human choice: Direct or competitive suppression? *Journal of the Experimental Analysis of Behavior*. **80**, 1-28.

- Newland, M.C., Pennypacker, H.S., Anger, K., Mele, P. (2003) Transferring behavioral technology across applications. *Neurotoxicology and Teratology*, **25**, 529-542.
- Newland, M.C. (2002) Neurobehavioral toxicity of methylmercury and PCBs: Effects-profile and sensitive populations. *Environmental Toxicology and Pharmacology*, **12**, 119-128.
- Rasmussen, E.B. and Newland, M.C. (2001) Developmental Exposure to Methylmercury Alters Behavioral Sensitivity to *d* Amphetamine and Pentobarbital in Adult Rats. *Neurotoxicology and Teratology*, **23**, 45-56.
- Newland, M.C. and Paletz, E.M. (2000) Animal studies of methylmercury and PCBs: What do they tell us about expected effects in humans? *NeuroToxicology*, **21**, 1003-1028.
- Newland, M.C. and Rasmussen, E.B. (2000) Aging unmasks adverse effects of gestational exposure to methylmercury in rats. *Neurotoxicology and Teratology*, **22**, 819-828
- Critchfield, T.S., Newland, M.C., Kollins, S.H. (2000) The good, the bad, and the aggregate. *The Behavior Analyst*, **23**, 107-116.
- Kollins, S.H., Critchfield, T.S., and Newland, M.C. Quantitative integration of single-subject studies: Methods and misinterpretations. (1999) *The Behavior Analyst*, **22**, 149-157.
- Newland, M.C., Reile, P.A. (1999). Blood and brain mercury levels after gestational exposure. *Toxicological Sciences (formerly Fundamental and Applied Toxicology)*, **50**, 106-116
- Newland, M.C. (1999). Animal models of manganese's neurotoxicity. *NeuroToxicology*, **20**, 415-432.
- Nagilla, R, Newland, M.C., Snyder, J and Bronson, M.E., (1998). Effect of once weekly treatment with 3,4-methylenedioxymethamphetamine on schedule-controlled behavior in rats. *European Journal of Pharmacology*, **385**, 1-8.
- Kollins, S.H., Shapiro, S.K., Newland, M.C., and Abramowitz, A. (1998). Discriminative and subject-related effects of methylphenidate in children diagnosed with attention deficit hyperactivity disorder (ADHD). *Experimental and Clinical Psychopharmacology*, **6**, 375-389.
- Kollins, S. H., Newland, M.C., Critchfield, T.S. (1997). Human sensitivity to reinforcement in operant choice: how much do consequences matter?

*Psychonomic Bulletin and Review*. **4**, 208-220. Erratum: *Psychonomic Bulletin & Review*, **4**, 431.

Newland, M.C. (1997). Quantifying the molecular structure of behavior: Separate effects of caffeine, cocaine, and adenosine agonists on interresponse times and lever-press durations. *Behavioural Pharmacology*, **8**, 1-6

Newland, M.C., Brown, K. (1997) Behavioral characterization of caffeine and adenosine agonists after chronic caffeine exposure. *Behavioural Pharmacology*. **8**, 1-30.

Newland, M.C., Warfvinge, K, Berlin, M. (1996). Behavioral consequences of *In Utero* exposure to mercury vapor: alterations in lever-press durations and learning in squirrel monkeys. *Toxicology and Applied Pharmacology*. **139**, 374-386.

Newland, M.C., Sheng, Y, Lögdberg, B., Berlin, M. (1996) *In Utero* lead exposure in squirrel monkeys: Motor effects seen with schedule-controlled behavior. *Neurotoxicology and Teratology*, **32**, 33-40

Bronson, M.E., Barrios-Zambrano, L., Jaing, W, Clark, C.R., DeRuiter, J, Newland, M.C. (1994) Behavioral and developmental effects of 3,4-methylenedioxymethamphetamine (MDMA) derivatives. *Drug and Alcohol Dependence.*, **36**, 161-166.

Newland, M.C., Sheng, Y, Lögdberg, B, Berlin, M. (1994) Prolonged behavioral effects of *in utero* exposure to lead or methylmercury: Reduced sensitivity to changes in reinforcement contingencies during behavioral transitions and in steady state. *Toxicology and Applied Pharmacology*. **126**, 6-15.

Zirix, J.M., Snyder, J.R., Newland, M.C., Weiss, B. (1993) Amphetamine modifies the microstructure of concurrent behavior. *Experimental and Clinical Psychopharmacology*, **1**, 121-132.

Mal, M.E., McCall, C.A., Newland, M.C., Cummins, K.A. (1993) Evaluation of a one-trial learning apparatus to test learning ability in weanling horses. *Applied Animal Behaviour Science*. **35**, 305-311.

Newland, M.C., and Brown, K. (1992) Oral caffeine consumption by rats: The roles of flavor history, concentration, concurrent food, and an adenosine agonist. *Pharmacology, Biochemistry, and Behavior*. **42**. 651-659.

Rosenfarb, I.S., Newland, M.C., Brannon, S.E., Howey, D.S. (1992) Effects of self-generated rules on the development of schedule-controlled behavior. *Journal of the Experimental Analysis of Behavior*. **58**, 107-121.

- Newland, M.C. (1992) Goal-Directed Behaviorism? A review of The Goal of B.F. Skinner and Behavior Analysis by R.W.Proctor and D.J.Weeks. *The Behavior Analyst*, 15, 165-170.
- Newland, M.C., Weiss, B. (1992) Persistent effects of manganese on effortful responding and their relationship to manganese accumulation in globus pallidus. *Toxicology and Applied Pharmacology*, 113, 87-97.
- Buskist, W., Newland, M.C., Sherburne, T. (1991) Continuity and Context. *The Behavior Analyst*, 14, 111-117.
- Newland, M.C. and Weiss, B. (1991) Ethanol's effects on tremor and positioning in squirrel monkeys. *Journal of Studies on Alcohol*, 52, 1-8.
- Newland, M. C., Rivera-Calimlim, L., and Weiss, B. (1991) Pantothenic acid attenuates the motor effects of ethanol. *Journal of Studies on Alcohol*, 53, 1-6.
- Newland, M. C., and Weiss, B. (1990) Drug effects on an effortful operant: pentobarbital and amphetamine. *Pharmacology, Biochemistry, and Behavior*, 36, 381-387.
- Lefavi, R.G., Reeve, T.G., Newland, M.C. (1990) Relationships between anabolic steroid and selected psychological parameters in male bodybuilders. *Journal of Sports Behavior*, 13, 157-166.
- Newland, M. C., Kordower, J. H., Ceckler, T., Weiss, B. (1989) Visualizing the primate basal ganglia with magnetic resonance imaging after manganese exposure. *Experimental Neurology*. 106, 251-258.
- Cory-Slechta, D. A., Widzowski, D. V., Newland, M. C. (1989) Behavioral differentiation of the stimulus properties of a dopaminergic D1 agonist from a D2 agonist. *Journal of Pharmacology and Experimental Therapeutics*. 250, 251-258.
- Weiss, B., Zirix, J., Newland, M. C. (1989) Serial properties of responding as a reflection of behavioral toxicity. *Animal Learning and Behavior*. 17, 83-93.
- Newland, M. C. (1988). Quantification of motor function in toxicology. *Toxicology Letters*, 43, 295-319.
- Newland, M. C., Cox, C., Oberdoerster, B., and Weiss, B. (1987). The clearance of manganese chloride in the primate. *Fundamental and Applied Toxicology*, 9, 314-328.
- Newland, M. C., Ng, W. W., Baggs, R. B., Gentry, G. D., Weiss, B., Miller, R. K. (1986). Operant behavior in transition reflects neonatal exposure to cadmium. *Teratology*, 34, 231-242.

Newland, M. C., Marr, M. J. (1985). The effects of chlorpromazine and imipramine on the rate and stimulus control of matching-to-sample. *Journal of the Experimental Analysis of Behavior*, 44, 49-68.

Stine, W. W., Howell, L. L., Murdock, G. K., Newland, M. C., Conradson, L., and Maple, T. L. (1982). The control of progression order in a captive herd of Sable Antelope (*Hippotragus niger*). *Zoo Biology*, 1, 89-119.

### Book Chapters

Newland, M.C., Donlin, W.D., Paletz, E.M., Banna, K.M. (2006) Developmental Behavioral Toxicity of Methylmercury: Consequences, Conditioning, and Cortex. In E. D. Levin and J.J. Buccafusco (Eds). *Animal Models of Cognitive Impairment*. Pp 101-146, CRC Press .

Bailey, C. and Newland, M.C. (2002) Toxics, environmental justice, and Alabama's pulp and paper industry. In M. el-Halwagi, J. Hall, U. Hatch, D. Block, E. Geiger (Eds), *Proceedings of the International Conference on the Fiber Industry and Environmental Biocomplexity*. Auburn: Auburn University Environmental Institute.

Newland, M.C., Reile, P.A. (1999) Learning and behavior change as neurotoxic endpoints. In H. A. Tilson and J. Harry (Eds) *Target Organ Series: Neurotoxicology*. New York: Raven Press. Pp 311-338.

Newland, M.C. (1997) Neural, behavioral, and measurement considerations in the detection of motor impairment. In Reuhl, K.R., and Lowndes, H.E. (Eds). *Comprehensive Toxicology: Vol 11: Nervous System and Behavioral Toxicology*. Elsevier pp 247-269.

Newland, M.C. and Shapiro, S.K. (1996) Studying the neurotoxicity of indoor air with nonhuman species: issues in experimental design and interpretation. In B. A. Berven and R. B. Gammage (Eds) *Indoor Air and Human Health Revisited*. Chelsea, MI: J. Lewis Press. pp 225-248

Newland, M.C. (1995) Motor function and the physical properties of the operant: screening and advanced applications. In Chang, L.W., and Slikker, W. (Eds) *Neurotoxicology: Approaches and Methods*. San Diego, Academic Press. pp 265-300.

Newland, M.C. (1993) Operant behavior and the measurement of motor dysfunction. In B. Weiss and J O'Donoghue (Eds). *Toxicological Interpretation of Neurobehavioral Data*. New York: Raven Press, 273-297.

### Published Abstracts

- Newland, M.C. and Reed, M.N. (2006) Mercury and selenium in brain and blood after chronic, low-level methylmercury exposure. *The Toxicologist*, 2006. (poster presented at the Society of Toxicology, 2006.
- Donlin, W.D., Newland, M.C. (2005). Increased sensitivity to pentobarbital of the behavior of rats exposed to methylmercury and selenium. Poster at the 22<sup>nd</sup> International Neurotoxicology Conference, Research Triangle Park, NC, September, 2005
- Pesek, E.F., Reed, M,N, and Newland, M.C. (2005). Spatial discrimination in rats continually exposed to selenium and gestationally exposed to methylmercury. Poster at the 22<sup>nd</sup> International Neurotoxicology Conference, Research Triangle Park, NC, September, 2005
- Heath, J.C., Newland M.C. (2005) Effects of methylmercury on the critical fusion frequency of rats. Poster at the 22<sup>nd</sup> International Neurotoxicology Conference, Research Triangle Park, NC, September, 2005
- Reed, M.N., Newland, M.C. (2005) Motor function and tissue levels in dams chronically exposed to methylmercury and selenium. Poster at the 22<sup>nd</sup> International Neurotoxicology Conference, Research Triangle Park, NC, September, 2005
- Reed, M.N., Newland, M.C. (2005) Behavioral effects of cocaine and desipramine in rats gestationally exposed to methylmercury and selenium. Poster at the 22<sup>nd</sup> International Neurotoxicology Conference, Research Triangle Park, NC, September, 2005
- Teodorescu, C. A., Schwartz, D.D., Newland, M. C., & Craig-Schmidt, M. C. (2005) Fish oil and methylmercury effects on blood pressure in a rat model. 96th American Oil Chemists' Society Annual Meeting and Expo, May 1-4, 2005, Salt Lake City, Utah, Abstracts, p. 47-48.
- Craig-Schmidt, M.C., Newland, M.C., Sachitano, I.A., & Teodorescu, C. (2004) Mercury and essential fatty acid interactions: effect on neonatal rat brain and liver phospholipid fatty acid composition. 5th Congress of the International Society for the Study of Fatty Acids and Lipids (ISSFAL). Brighton, UK, June 27-July1, 2004. Abstracts, p. 92.
- Sachitano, I., Teodorescu, C., Newland, M.C., and Craig-Schmidt, M.C. (2004) Interactive effects of methylmercury and fish oil on neonatal rat liver phospholipid fatty acids. 95th American Oil Chemists' Society Annual Meeting and Expo, May 9-12, 2004, Cincinnati, Ohio, Abstracts, p. 59-60 .
- Craig-Schmidt, M., & Newland, C. (2004) Omega-3 fatty acids, mercury toxicity, and chronic disease states. 95th American Oil Chemists' Society Annual Meeting and Expo, May 9-12, 2004, Cincinnati, Ohio. Abstracts, p 52. (invited talk)
- Craig-Schmidt, M.C., Eckley, E.C., Inniss, A.C., & Newland, M.C. (2004) DHA in neonatal rat brain is influenced by diet, but not by maternal exposure to methylmercury. *The FASEB Journal* 18, Abstract 125.4.
- Newland, M.C., Reile, P.A., Langston, J.L., Paletz, E.M. (2002) Gestational exposure to methylmercury retards operant behavior in transition in adult rats. *Toxicological Sciences*.
- Rasmussen, E.B. and Newland, M.C. (1999) Acquisition of a multiple DRH Extinction schedule of reinforcement in rats exposed during development to methylmercury. Annual Meeting of the Society of Toxicology. March, 1999. New Orleans, LA.
- Newland, M.C. and Rasmussen, E. B.(1999) Developmental exposure to methylmercury affects high-rate behavior in the aging rat. acquisition of DRH performance in rats exposed prenatally to methylmercury. Annual Meeting of the Society of Toxicology. March, 1999. New Orleans, LA.

- Newland, M.C., Reile, P.A., Dunn, W.W. (1998) Blood and brain mercury levels after gestational exposure to methylmercury in rats. *Fundamental and Applied Toxicology*, **36**, 13-14.
- Bronson, M.E., Snyder, J., Nagilla, R., Newland, M.C. (1998) Effect of once weekly treatment with MDMA on schedule-controlled behavior and locomotor activity. *Behavioural Pharmacology*, **9**, Supplement 1, S19.
- Bronson, M.E., Langston, J., Newland, M.C., Clark, C.R., DeRuiter, J. (1996) Characterization of cathinone, Nexus, MBDB, and Flea in female rats trained to discriminate MDMA. *NIDA Research Monographs Series, Problems of Drug Dependence*, L. S. Harris (Ed). U. S. Dept. of Health and Human Services.
- Newland, M.C.; Sheng, Y; Lögdberg, B., Weiss, B., Berlin, M. (1993) Behavioral teratogenicity of methylmercury and lead is expressed in the acquisition and maintenance of operant behavior under concurrent schedules. *The Toxicologist*.
- Newland, M.C., Lögdberg, B. Sheng, Y., Berlin, M., Weiss, B. (1992) Prenatal lead exposure alters operant behavior in squirrel monkeys. *The Toxicologist*, **12**, 314.
- Lögdberg, B., Newland, M.C., Sheng, Y., Berlin, M., Weiss, B. (1992) Prenatal exposure to methylmercury alters operant behavior and response topography in squirrel monkeys. *The Toxicologist*, **12** 314.
- Mal, M.E.; McCall, C.A.; Cummins, K.A., Newland, M.C. (1992) Influence of early handling on subsequent learning abilities in weanling horses. *Journal of Animal Science.*, **70**, 156.
- Lefavi, R.G., Reeve, T.G., Newland, M.C. (1989) The association between anabolic steroid use and selected psychological parameters. *Journal of Applied Sport Science Research*. (1989).
- Newland, M.C. (1988) Accumulation of manganese in globus pallidus and effects on motor function. *Pharmacology, Biochemistry, and Behavior*, **30** 559.
- Newland, M. C., Ceckler, T. L., and Weiss, B. (1988). Persistence of manganese in globus pallidus and substantia nigra revealed by magnetic resonance imaging. *The Toxicologist*, **8**, 246.
- Weiss, B., and Newland, M. C. (1988). Manganese administration induces persisting effects on effortful behavioral responses. *The Toxicologist*, **8** 75.
- Newland, M. C., Rivera-Calimlim, L., Weiss, B. (1987). The B-vitamin, pantothenic acid can block the motor effects of ethanol in primates. *Pharmacology, Biochemistry and Behavior*, **27** 590.
- Newland, M. C., Kordower, J. H., Ceckler, T. L., and Weiss, B. (1987). Visualizing primate basal ganglia with magnetic resonance after manganese chloride. *Society for Neuroscience Abstracts*, **13**, 1363.
- Newland, M. C., Kordower, J. H., Ceckler, T. L., and Weiss, B. (1987). Imaging manganese in the primate brain with magnetic resonance. *The Toxicologist*, **7**, 157.
- Newland, M. C., Rivera-Calimlim, L., and Weiss, B. (1987). Pantothenic acid blocks the behavioral effects of ethanol in the squirrel monkey. *Federation Proceedings*, **46**, 1130.
- Gash, D. M., Ziriak, J. M., Newland, M. C., Korodower, J. H., Kraus, A. L., Snyder, J., and Weiss, B. (1986). Effects of MPTP (1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine) on motor performance in cercopithecus aethiops and cebus apella. *Society for Neuroscience Abstracts*, **12**, 610.

- Newland, M. C., and Weiss, B. (1986). Effects of oxotremorine on tremor and operant behavior in squirrel monkeys. *The Toxicologist*, **6**, 25.
- Newland, M. C., Oberdoerster, G., Weiss, B. (1986). The clearance of manganese chloride in the primate. *The Toxicologist*, **6**, 25.
- Newland, M. C., Ng, W. W., Miller, R. K., Baggs, R. B., and Weiss, B. (1984). Selective effects on operant behavior of neonatal exposure to cadmium chloride. *Pharmacology, Biochemistry, and Behavior*, **20**, 995.
- Ng, W. W., Newland, M. C., Miller, R. K., Baggs, R. B., and Weiss, B. (1984). Neonatal exposure to cadmium causes hydrocephalus and alterations in adult operant behavior. *The Toxicologist*, **4**, 89.
- Newland, M. C., Ng, W. W., Baggs, R. B., Miller, R. K., Infurna, R. N., and Gentry, G. D. (1983). Acute behavioral toxicity of cadmium in neonatal rats. *Teratology*, **27**, 65A-66A.

### Invited Presentations

- Newland, M.C. (2008) Methylmercury and response perseveration: Links and mechanisms. Invited Address to California Association for Behavior Analysis. Garden Grove, CA, Feb, 2008.
- Newland, M.C. (2008) Methylmercury and abnormal development: Models and Mechanisms. Neuroscience Colloquium. Idaho State University, Pocatello, ID.
- Newland, M.C. (2008) Methylmercury, fish nutrients, and behavioral perseveration: Actions and implications. University of Rochester, Department of Environmental Medicine, Environmental Health Sciences Center Seminar Series. April, 2008.
- Newland, M.C. (2007) Fish nutrients and methylmercury: A view from the lab. *Twenty Fourth International Neurotoxicology Conference: Environmental Etiologies of Neurological Disorders*. San Antonio, TX. Nov. 2007.
- Newland, M.C. (2007). Cognitive consequences of developmental methylmercury exposure: Does diet play a role. Integrated Toxicology and Environmental Health Program, Duke University, September, 2007.
- Newland, M. C. (2007) The Behavioral Toxicity of Methylmercury. WATER Institute, University of Wisconsin at Milwaukee. April, 2007
- Newland, M.C. (2007) Behavior Analysis and Behavioral Toxicology: Reciprocal Relationships. Department of Psychology, University of Wisconsin at Milwaukee. April 2007
- Newland, M.C., Heath, J., Reed, M.N., Donlin, W.D. (2006) Mercury and selenium interactions in an animal model. Mercury 2006: International Conference on Mercury as a Global Pollutant, Madison, WI, August, 2006. (Special session on mercury/selenium interactions).
- Newland, M.C. and Donlin, W.D. (2006) Applied modeling and the identification of behavioral mechanisms of action. Society for the Quantitative Analysis of Behavior invited tutorial. Association for Behavior Analysis, May, 2006.
- Newland, M.C. (2006). Methylmercury, Perseveration, and Behavioral Interventions: Applications of a Laboratory Model of Developmental Disabilities.. Invited Colloquium at the Shriver Center/University of Massachusetts. 7 April 2006.
- Newland, M.C. (2005). Experimental neurotoxicology of methylmercury: Roles of nutrition and dosing regimen in its behavioral effects. Invited seminar at Department of Nutrition Sciences, University of Alabama at Birmingham, Birmingham, AL.
- Newland, M.C. (2005). Methods for assessing neural damage: Lessons from behavioral toxicology. Presented at Animal Models and Human Effects Advisory Panel. Institute for Non-Lethal Weapon Technology/The Pennsylvania State University. Arlington, VA, Jan, 2005.
- Newland, M.C. (2005). Behavioral toxicology: Subtle effects, large consequences, and public health. Advancing Applied Behavioral Science in Psychology (conference). Sponsored by University of Kansas. Lawrence Kansas, April, 2005.
- Newland, M.C. and Babcock, R.A. (2004) A drug isn't just a drug: How environments matter in behavioral pharmacology. Invited workshop Alabama Association for Behavior Analysis. Birmingham, AL 16 November, 2004.

- Newland, M.C. (2004) The *low* end of the dose-effect curve. Where behavioral toxicology happily cohabitates with behavior analysis. Midwestern Association for Behavior Analysis. Indianapolis, IN, 2 October, 2004.
- Newland, M.C. (2004) Fish, mercury and nutrition. Workshop (3 hour) for the International Center for Aquaculture, American Soybean Training Program. Auburn University Department of Fisheries and Allied Aquacultures. 16 July 2004
- Newland, M.C. Methylmercury and nutrition. (2004) Invited address to the Office of Science Policy, U. S. Environmental Protection Agency, Reagan Office Building, Washington, DC. 16 June 2004.
- Newland, M.C. Aging begins in the womb. (2004) Distinguished Alumnus Lecture. Georgia Institute of Technology. April, 2004.
- Craig-Schmidt, M. and Newland, C. (2004) Omega-3 Fatty acids, mercury toxicity, and chronic disease states. 95th American Oil Chemists' Society Annual Meeting and Expo, May 9-12, 2004, Cincinnati, Ohio, Abstracts, p. X . (invited symposium talk)
- Newland, M.C. (2003) Data analysis and data interpretation. *Behavioral Test Methods Workshop*. Behavioral Toxicology Society/Neurobehavioral Teratology Society joint meeting. Philadelphia, June 2003.
- Newland, M.C. (2003) Newland and behavioral mechanisms of behavior change: Experimental models and species generality. Keynote Address. *Maternal and Infant Long-Chain Polyunsaturated Fatty Acid Workshop*. Kansas City, MO. May, 2003.
- Newland, M.C. (2003) Methylmercury: Just what is the problem and is there a solution? *Auburn University Environmental Institute Earth Day Symposium*. April. 2003.
- Newland, M.C. (2002) Silent damage: Behavioral challenges and aging unmask early toxicant exposure. Invited Address: *American Psychological Association*. Chicago, IL. August, 2002.
- Newland, M.C. (2001) Silent damage: Developmental neurotoxicity of methylmercury across the lifespan *Auburn University Environmental Institute*. Fall, 2001.
- Newland, M.C. (2001) Killing us softly: Development, aging, and behavioral toxicology. Invited address to the Association for Behavior Analysis, May, 2001.
- Newland, M.C. (2001) Careers in behavioral toxicology. Invited paper given to symposium on Careers in Behavior Analysis. *Association for Behavior Analysis*. May, 2001.
- Bailey, L.C., and Newland, M.C. (2001) Toxic substances, environmental justice, and Alabama's pulp-and-paper industry. *Center for Paper Business and Industry Studies/Georgia Institute of Technology*. Atlanta, GA. 27 March 2001.
- Newland, M. C. (2000) Environmental neurotoxicants and (lifespan) developmental disabilities. *Alabama Association for Behavior Analysis Annual Meeting*, Oct 2000.
- Newland, M.C. (2000) Neurobehavioral toxicity of Methylmercury and PCBs: Effects-profiles and sensitive populations. *International Association for Great Lakes Research (IAGLR) Annual Conference*. May, 2000.
- Newland, M.C., and Paletz, E.M. (2000) Animal studies of methylmercury and PCBs: What do they tell us about expected effects in humans? Presented at "*Children's Health and the Environment: Seventeenth Annual International Neurotoxicology Conference*. Little Rock, AK September, 1999.

- Newland, M.C. (2000) Neurotoxicity of Methylmercury Across the Lifespan. *Auburn University College of Veterinary Medicine*. November, 1999.
- Newland, M.C. (2000) Behavior Change as a Neurotoxic Endpoint. *National Health and Environmental Effects Laboratory, U. S. Environmental Protection Agency*, Research Triangle, N.C.. May, 1998.
- Newland, M.C. (2000) The roles of dose and route of exposure on the neurobehavioral effects of manganese. *Manganese: Are There Effects from Long-Term, Low-Level Exposure*. 15<sup>th</sup> International Neurotoxicology Conference. Little Rock, AK. October, 1997.
- Newland, M.C. and Reile, P.A. (2000) Quantitative descriptions of behavior during transitional states: contributions from behavioral toxicology. *Annual Meeting of the Society for the Quantitative Analysis of Behavior*. Chicago, May, 1997
- Newland, M.C. Behavioral Endpoints to Identify Neurotoxic Effects of Mercury Vapor in Animals. (1996) Invited address at the *Mercury Vapor Toxicology Update*. Subcommittee on Dental Amalgam of the Public Health Services Environmental Health Policy Committee. Bethesda, Md., June, 1996
- Newland, M.C. (1995) Can Environmental Neurotoxicants Cause Behavioral Disorders? What We Know and How We Know It. Invited Colloquium at *Auburn University at Montgomery Departments of Biology and Psychology*. May 5, 1995.
- Newland, M.C. (1995) Motor Function. Invited address at the *Workshop on Risk Assessment of Neurobehavioral Toxicity*. Sponsored by the Committee on Toxicology, National Research Council, Beckman Center, Irvine, CA Jan 18, 1995
- Newland, M.C. (1994) The Toxicity of Manganese in Nonhuman Primates. Invited address at the *Workshop on the Bioavailability and Oral Toxicity of Manganese*. Sponsored by the United States Environmental Protection Agency: Environmental Criteria and Assessment Office. Cincinnati, OH, August 30-31, 1994.
- Newland, M.C. (1994) The value of behavioral mechanisms in studies of developmental toxicology. Invited address at *Symposium on Persisting Effects of Developmental Exposure to Toxicants*. Neurobehavioral Toxicology Society. Puerto Rico. June, 1994.
- Newland, M.C. and Shapiro, S.K. (1994) Essential elements for an animal model of human vigilance and distractibility. Invited address at *Oak Ridge National Laboratories Life Sciences Symposium: Indoor Air and Human Health Revisited*. Knoxville, TN. March 30, 1994.
- Newland, M.C. (1993) Behavioral change and behavioral teratology: concurrent schedules, lead, and methylmercury. Invited presentation to *Southeastern Association for Behavior Analysis (SEABA)*, October 15, 1993, Chapel Hill, NC
- Newland, M.C. (1993) Behavioral teratogenicity of mercury and lead. *Behavioral Biology Group, Yerkes Regional Primate Center*. Atlanta, GA. March, 1993
- Newland, M.C. (1992) A profile of manganese's neurotoxicity: kinetics, behavior, and accumulation in the globus pallidus. Colloquium at the Department of Pharmacology and Toxicology, *College of Pharmacy, University of Georgia, Athens, Ga.*, 14 October 1992.
- Newland, M.C. (1990) Operant behavior and the measurement of motor dysfunction. Invited presentation to the *Eighteenth Rochester Conference on Environmental Toxicity: Workshop on the Toxicological Interpretation of Neurobehavioral Data*. (Schedule-controlled operant behavior II. Advanced Applications.) Rochester, NY. June, 1992.

- Newland, M.C. (1990) Manganese Neurotoxicity. *Southeastern Society of Toxicology*. Columbia, SC. September, 1990.
- Newland, M.C. (1990) Risk assessment: from the laboratory to the public. Symposium on the *Health Effects of Fungal Toxins in the Food and Feed Supply*, Auburn University. 1990. Also videotaped for use in continuing education for veterinarians.
- Newland, M.C. (1990) Assessing motor and behavioral effects of drugs and toxic substances. Colloquium at the *Department of Psychology, University of Mississippi*. April, 1990.
- Newland, M.C. (1990) Caffeine and behavior. *Liberal Arts Brown Bag Series*. Auburn University Jan. 1990.
- Newland, M.C. (1990) Ethanol and Tremor. *Motor behavior laboratory, Auburn University*, February, 1990.
- Newland, M.C. (1990) Uses of spectral analyses in the analysis of behavior. *Jacksonville State University*, October, 1989.
- Newland, M. C. (November, 1987). Behavioral assessment of neurotoxic substances: The role of experimental psychology. *Colloquium at the Department of Psychology, Tulane University*, New Orleans, LA.
- Newland, M. C. (November, 1987). Quantification of motor performance in behavioral toxicology. Presented at the *17th Conference on Toxicology, Session V. Quantitative methods for Behavioral Toxicology*. Wright-Patterson Air Force Base, OH.
- Weiss, B., Ziriax, J., and Newland, M. C. (June, 1984). Serial properties of responding as a reflection of behavioral toxicity. *Harvard symposium on Quantitative Analyses of Behavior: Biological determinants of reinforcement and memory*. Cambridge, Mass.
- Newland, M. C. (April, 1984). The effects of toxic exposure on the nervous system. *New York Public Interest Group (NYPIRG) Occupational Health Day*, Syracuse, NY.
- Newland, M. C. (March, 1984). The uses of behavior in toxicology. *New Investigators Colloquium, Society of Toxicology*, Atlanta, GA.

### Other Presentations

- Paletz, E.M., Day, J., Craig-Schmidt, M.C., Newland, M.C. (2006) Effects of developmental mercury exposure and lifelong exposure to DHA on discrimination reversal in adulthood and aging. Mercury 2006: International Conference on Mercury as a Global Pollutant, Madison, WI, August, 2006.
- Teodorescu, C, Newland, M.C., Craig-Schmidt, M.C. (2006) Interactions of MeHg and fish oil on cardiovascular functions in a rodent model. Mercury 2006: International Conference on Mercury as a Global Pollutant, Madison, WI, August, 2006.
- Banna, K.M., Newland, M.C. (2006) An analysis of transitional behavior in fish responding under concurrent schedules of reinforcement. Association for Behavior Analysis, May, 2006.
- Heath, J.C. and Newland, M.C. (2006) The effects of methylmercury on the critical flicker fusion in rats. Association for Behavior Analysis. May, 2006.
- Heath, J.C. and Newland, M.C. (2006) Pre-natal methylmercury exposed rats on a high or low selenium diet respond differently under a multiple low-or high-percentile 20:0.75 or DRH 8:4 schedule of reinforcement. Association for Behavior Analysis. May, 2006.
- Banna, K.M. and Newland, M.C. (2006). The application and validation of a logistic function to model behavior in transition. Association for Behavior Analysis, May, 2006.
- Newland, M.C. (2006) Behavior Analysis and Biomedical Science. Symposium organized at the Association for Behavior Analysis. May, 2006.
- Newland, M.C. (2006) Vertical and horizontal reductionism in behavioral neuroscience. Association for Behavior Analysis, May, 2006.
- Reed, M.N. and Newland, M.C. (2006) Clocks and dopamine: Drug effects on behavior under clocked and unclocked FI schedules. Association for Behavior Analysis, May, 2006.
- Donlin, W.D., Newland, M.C. (2005). Increased sensitivity to pentobarbital of the behavior of rats exposed to methylmercury and selenium. Poster at the 22<sup>nd</sup> International Neurotoxicology Conference, Research Triangle Park, NC, September, 2005
- Day, J.J., Paletz, E.M., Craig-Schmidt, M.C., and Newland, M.C. (2005). Developmental exposure to methylmercury and n-3 fatty acids: Performance on spatial and visual discrimination reversal tasks in adult and aged rats. Poster at the 22<sup>nd</sup> International Neurotoxicology Conference, Research Triangle Park, NC, September, 2005
- Pesek, E.F., Reed, M,N, and Newland, M.C. (2005). Spatial discrimination in rats continually exposed to selenium and gestationally exposed to methylmercury. Poster at the 22<sup>nd</sup> International Neurotoxicology Conference, Research Triangle Park, NC, September, 2005
- Heath, J.C., Newland M.C. (2005) Effects of methylmercury on the critical fusion frequency of rats. Poster at the 22<sup>nd</sup> International Neurotoxicology Conference, Research Triangle Park, NC, September, 2005
- Reed, M.N., Newland, M.C. (2005) Motor function and tissue levels in dams chronically exposed to methylmercury and selenium. Poster at the 22<sup>nd</sup> International Neurotoxicology Conference, Research Triangle Park, NC, September, 2005
- Reed, M.N., Newland, M.C. (2005) Behavioral effects of cocaine and desipramine in rats gestationally exposed to methylmercury and selenium. Poster at the 22<sup>nd</sup> International Neurotoxicology Conference, Research Triangle Park, NC, September, 2005

- Reed, M, Newland, M.C. (2005) Effects of Gestational Methylmercury Exposure on Behavior Under External Stimulus Control Following Drug Challenges. Association for Behavior Analysis. Chicago. May, 2005.
- Donlin, W.D., Newland, M.C. (2005). Comparing Response Rate Components of Two Multiple Schedule Arrangements Using a Log Survivor Plot Analysis of Interresponse Times. Association for Behavior Analysis. Chicago. May, 2005.
- Craig-Schmidt, M.C., Newland, M.C., Sachitano\*, I.A. and Teodorescu\*, C. (2004) Mercury and essential fatty acid interactions: effect on neonatal rat brain and liver phospholipid fatty acid composition. 5th Congress of the International Society for the Study of Fatty Acids and Lipids(ISSFAL). Brighton, UK, June 27-July1, 2004.
- Zinn, T., Newland, M.C. (2004) Use of stimulus equivalence to teach drug names. To be presented at Association for Behavior Analysis. May, 2004.
- Heath, J. Newland, M.C. (2004) Developing a method for examining critical flicker fusion in rats. Association for Behavior Analysis. May 2004.
- Craig-Schmidt, M. C., Reile, P. and Newland, M. C. (2003) Omega-3 fatty acids and fecundity in rats exposed to methylmercury. Maternal and Infant LCPUFA Workshop, Kansas City, Missouri, May 3-4, 2003
- Paletz, E.M., Day, J., Craig-Schmidt, M., Newland, M.C. (2004) Gestational exposure to methylmercury: Minimal interactions with of n-3 fatty acids on neonatal tissue levels and behavior in adulthood. Behavioral Toxicology Society, North Carolina, 2004
- Newland, M.C. Nutrition and Neurotoxicology. (2004) Symposium at the annual meeting of the Behavioral Toxicology Society, North Carolina.
- Craig-Schmidt, M.C., Eckley, E.E., Inniss, A., and Newland, M.C. (2004) DHA in neonatal rat brain is influenced by diet, but not by maternal exposure to methylmercury. Experimental Biology, April 17-21, 2004, Washington, D.C.
- Donlin, W.D., and Newland, M.C. (2004) Analysis of response bursts in rats chronically exposed to methylmercury and n-3 fatty acids post-natally. Behavioral Toxicology Society, North Carolina, 2004.
- Day, J. and Newland, M.C. (2004). Effects of chronic and gestational methylmercury exposure on motor function in rats. Behavioral Toxicology Society. North Carolina, 2004.
- Craig-Schmidt, M.C., Newland, M.C., Sachitano\*, I.A. and Teodorescu\*, C. (2004) Mercury and essential fatty acid interactions: effect on neonatal rat brain and liver phospholipid fatty acid composition. 5th Congress of the International Society for the Study of Fatty Acids and Lipids(ISSFAL). Brighton, UK, June 27-July1, 2004.
- Craig-Schmidt, M.C., Eckley\*\*, E.E., Innis\*, A., and Newland, M.C. (2004) DHA in neonatal rat brain is influenced by diet, but not by maternal exposure to methylmercury. Experimental Biology, April 17-21, 2004, Washington, D.C.
- Craig-Schmidt, M. C., Reile, P. and Newland, M. C. (2003) Omega-3 fatty acids and fecundity in rats exposed to methylmercury. Maternal and Infant LCPUFA Workshop, Kansas City, Missouri, May 3-4, 2003
- Newland, M.C. Workshop: Bringing developmental disabilities into the laboratory: Bridging research and application. *American Psychological Association*. Toronto, CA. August, 2003.
- Newland, M.C. Mercurial Advisories: Conflicting Evidence About Contaminants, Nutrients, and Lifespan Development *American Psychological Association*. Toronto, CA. August, 2003.

- Newland, M.C. Workshop: Experimental models of disorders of development. *Association for Behavior Analysis*. San Francisco, May, 2003.
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- Newland, M.C. Lead exposure during gestation produces prolonged retardation in the rate of behavioral transitions under concurrent schedules of reinforcement. Presented at the Symposium on Contributions of the Experimental Analysis of Behavior to the Environmental Health Sciences. *Association for Behavior Analysis*, May, 1994
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