CURRICULUM VITA

1. Name: Russell M. Church

Position: Edgar J. Marston Professor of Cognitive, Linguistic, and

Psychological Sciences

Department: Cognitive, Linguistic, and Psychological Sciences

2. Home Address: 20 Abbotsford Ct., Providence, RI 02906

3. Education

BA University of Michigan, 1952 Psychology and Sociology

MA Harvard University, 1954 Social Psychology Ph.D. Harvard University, 1956 Social Psychology

Dissertation Topic: Factors affecting learning by imitation in the rat

4. Professional appointments

Brown University Professor of Psychology, 1965-present

Charles Pitts Robinson and John Palmer Barstow Professor, 1993-1999

Edgar J. Marston Professor of Psychology, 1999-2011

Edgar J. Marston Professor of Cognitive, Lingistic, and Psychological Sciences, 2011-present.

Brown University Associate Professor, 1960-65

Brown University Instructor-Assistant Professor, 1955-60

Brown University Chair, Department of Psychology, 1980-83

Brown University Professor of Cognitive and Linguistic Sciences, 1986-90

Brown University Affiliated Faculty, Graduate Program in Neural Science

Brown University Affiliated Faculty, Department of Cognitive and Linguistic Sciences

Brown University Affiliated Faculty, Brain Science Graduate Program

University of Pennsylvania, Visiting Scholar, 1963-64

University of Michigan, Visiting Research Scholar, 1970-71

Rockefeller University, Visiting Professor of Psychology, 1978-79

University of Cambridge, Senior Research Scholar, 1984-85, Member of Corpus Christi College, and Department of Experimental Psychology

University of Cambridge, Visiting Scientist, 1990-91, Member of King's College, and Department of Experimental Psychology, and Medical Research Council Applied Psychology Unit

5. Publications

a. Books/monographs

Boe, E. E., & Church, R. M. Eds. (1968). *Punishment: Issues and experiments* . New York: Appleton-Century-Crofts.

- Campbell, B. A., & Church, R. M., Eds. (1969). *Punishment and aversive behavior*. New York: Appleton-Century-Crofts.
- Commons, M. L., Church, R. M., Stellar, J., & Wagner, A. R., Eds. (1988). Quantitative analysis of behavior: Biological determinants of behavior (Vol 7) The biological basis of reinforcement. Hillsdale, NJ: Erlbaum Associates.

b. Chapters in books

- Church, R. M. (1968). Applications of behavior theory to social psychology: Imitation and competition. In E. C. Simmel, R. A. Hoppe, and G. A. Milton (Eds.), *Social facilitation and imitative behavior*. Boston: Allyn and Bacon.
- Church, R. M. (1969). Response suppression. In B. A. Campbell & R. M. Church, Eds. *Punishment and aversive behavior*. New York: Appleton-Century-Crofts, pp. 111-156.
- Church, R. M. (1971). Aversive behavior. In L. A. Riggs & J. W. Kling (Eds), *Experimental psychology*. New York: Holt, pp. 703-741.
- Church, R. M., & Church, K. W. (1977). Plans, goals, and search strategies for the selection of a move in chess. In P. Frey (Ed), *Chess skill in man and machine*. New York: Springer-Verlag, pp. 131-156.
- Church, R. M. (1978). The internal clock. In S. Hulse, H. Fowler, W. K. Honig (Eds). Cognitive processes in animal behavior. Hillsdale, NJ: Erlbaum Associates, pp. 277-310.
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- Church, R. M., & Meck, W. H. (1983). Acquisition and cross-modal transfer of classification rules for temporal intervals. In M. L. Commons, A. R. Wagner, & R. Herrnstein (Eds.), *Quantitative analyses of behavior: Vol IV*, Acquisition, Ballinger, pp. 75-97.
- Church, R. M. (1984). Properties of the internal clock. In J. Gibbon, L. G. Allan (Eds) *Annals of the New York Academy of Sciences: Timing and time perception*. New York: New York Academy of Sciences, pp. 566-582.

Church, R. M., & Meck, W. H. (1984). The numerical attribute of stimuli. In H. L. Roitblat, T. G. Bever, & H. S. Terrace (Eds.), *Animal cognition*, Hillsdale, N. J.: Erlbaum Associates, pp. 445-463.

- Gibbon, J., Church, R. M., & Meck, W. H. (1984). Scalar timing in memory. In J. Gibbon, & L. G. Allan (Eds), *Annals of the New York Academy of Sciences: Timing and time perception*, New York: New York Academy of Sciences, pp. 52-77.
- Gibbon, J., & Church, R. M. (1984). Sources of variance in information processing theories of timing. In W. L. Roitblat, T. G. Bever, & H. S. Terrace (Eds), *Animal cognition*, Hillsdale, N. J.: Erlbaum Associates, pp. 465-488.
- Siegel, S. F., & Church, R. M. (1984). The decision rule in temporal bisection. In J. Gibbon, & L. G. Allan (Eds.), *Annals of the New York Academy of Sciences: Timing and time perception*, pp. 643-645.
- Church, R. M. (1985). Approaches to the study of behavioral pharmacology. In F. R. Brush, & J. B. Overmier (Eds.), *Affect, conditioning and cognition:* essays on the determinants of behavior. Hillsdale, N.J.: Erlbaum Associates, pp. 163-180.
- Church, R. M. & Broadbent, H. A. (1991). A connectionist model of timing. In M. L. Commons, S. Grossberg, and J. E. R. Staddon, *Quantitative models of behavior: Neural networks and conditioning.* Hillsdale, NJ: Erlbaum. Pp 225-240.
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- Church, R. M. (1991). Introduction to Special Issue on Animal Timing, *Learning and Motivation*, 22, 1-2.
- Church, R. M., Broadbent, H. A., & Gibbon, J. (1992). Biological and psychological description of an internal clock. In I. A. Gormezano and E. A. Wasserman (Eds.) *Learning and memory: The behavioral and biological substrates*. Hillsdale NJ: Erlbaum, Pp 105-127.
- Church, R. M. (1989). Theories of timing behavior. In S. B. Klein, & R. Mowrer (Eds) *Contemporary learning theory.* Hillsdale, NJ: Erlbaum, pp 41-69.
- Church, R. M. (1989). The yoked control design. In T. Archer & L. Nilsson (Eds), *Aversion, avoidance and anxiety: Perspectives on aversively motivated behavior.* Hillsdale, NJ: Erlbaum, pp 403-415.

Broadbent, H. B., Rakitin, B., Meck, W., & Church, R. M. (1993). The quantitative relationship between timing and counting. In S. Boysen and J. Capaldi (Eds). *The development of numerical ability: Animal and human models*. Hillsdale NJ: Erlbaum Associates, pp. 171-187.

- Church, R. M. (1993). Uses of computers in psychological research. In G. Keren and C. Lewis (Eds.) *Methodological and quantitative issues in the analysis of psychological data*. Hillsdale NJ: Erlbaum Associates, pp. 459-491.
- Church, R. M. (1994) Internal-clock models. S. L. Macey (Ed.) *Encyclopedia of Time*. New York: Garland, pp. 314-315.
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- Church, R. M. (2006). Behavioristic, cognitive, biological, and quantitative explanations of timing. In E. A. Wasserman and T. R. Zentall (Eds.) *Comparative cognition: Experimental explorations of animal intelligence* (pp. 3-19). Oxford: Oxford University Press.

c. Refereed journal articles

- Church, R. M. (1956). Effect of overtraining on subsequent learning of incidental cues. *Psychological Reports*, 2, 247-254.
- Church, R. M., Brush, F. R., & Solomon, R. L. (1956). Traumatic avoidance learning: The effects of CS-US interval with a delayed-conditioning procedure in a free-responding situation. *Journal of Comparative* and Physiological Psychology, 49, 301-308.
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- Church, R. M., & Deluty, M. Z. (1977). The bisection of temporal intervals. *Journal of Experimental Psychology: Animal Behavior Processes*, 3, 216-228.
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- Roberts, S., & Church, R. M. (1978). Control of an internal clock. *Journal of Experimental Psychology: Animal Behavior Processes*, 4, 318-337.
- Church, R. M. (1980). Short-term memory for time intervals. *Learning and Motivation*, 11, 208-219.
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- Thompson, C. R., & Church, R. M. (1980). An explanation of the language of a chimpanzee. *Science*, 208, 313-314.
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- Church, R. M. (1983). The influence of computers on psychological research: A case study. *Behavior Research Methods & Instrumentation*, 15, 117-126.
- Maricq, A. V., & Church, R. M. (1983). The differential effects of haloperidol and methamphetamine on time estimation in the rat. *Psychopharmacology*, 79, 10-15.
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- Meck, W. H., Church, R. M., & Olton, D. (1984). Hippocampus, time, and memory. *Behavioral Neuroscience*, 98, 3-22.
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- Meck, W. H., Church, R. M., & Olton, D. S. (2013). Behavioral neuroscience at 30: Reprinted article: Hippocampus, time, and memory. *Behavioral Neuroscience*, 2013, 127, 655-668.
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Church, R. M., Miller, M. C., Freestone, D., Chiu, C., Osgood, D. P., Johanson, C. E., Silverberg, G. D. (2014). Amyloid-Beta Accumulation, neurogenesis, behavior, and the age of rats. *Behavioral Neuroscience*, 128, 523-536.

- Kalafut, K. L., Freestone, D. M., MackInnis, M. L. M., & Church, R. M. Inegrating timeing and conditioning approaches to study behavior. *Journal of Experimental Psychology: Animal Learning and Cognition*, 46, 431-439.
- Kalafut, K. L., & Church, R. M. (2014). Brief stimuli as context. *Behavioural processes*, 104, 65-71.
- Church, R. M. (2014). A resolution of the debate about associative and temporal learning, *Behavioral processes*, 101, 163-165.
- Freestone. D. M., Balci, F., Simen, P., Church, R. M. (2015) Optimal resonse rates in humans and rats. *Journal of Experimental Psychology: Animal Learning and Cognition*, 41, 39-51.
- Tatiane P. Labliuk, Paulo Guilhardi, Andre M. Cravo, Russell M. Church, & Marcelo S. Caetano (2015). Determinants of temporal or stimulus control in humans and rats. *International Journal of Comparative Psychology*, 28, 1-13.

d. Non-refereed journal articles

- Allan, L., Balsam, P., Church, R., & Terrace, H. (2002). John Gibbon (1934-2001): Obituary. *American Psychologist*, 57, 436-437.
- Kurtzman, H. S., Church, R. M., & Crystal, J. D. (2002). Data archiving for animal cognition research: Report of an NIMH workshop. *Animal Learning & Behavior*, 30, 405-412.
- Kyonka, E. G. E., & Church, R. M. (2005). Empirical tests of "Take-the-Best" with non-human subjects. Commentary on Hutchinson & Gigerenza (2005). *Behavioural Processes*, 69, 133-135.

e. Book Reviews

- Church, R. M. (1963). Sweet lemons. Review of D. H. Lawrence and L. Festinger (Eds), Deterrents and reinforcements: The psychology of insufficient reward. *Contemporary Psychology*, 8, 177-178.
- Church, R. M. (1971). Operant sociology. Review of R. L. Burgess, & D. Bushell, Jr. (Eds), Behavioral sociology: The experimental analysis of social process. *Contemporary Psychology*, 16, 340-342.

Church, R. M. (1973). Laws of learning. Review of R. F. Brush (Ed), Aversive conditioning and learning. *Contemporary Psychology y*, 18, 871-874.

- Church, R. M. (1976). Learning theory today. Review of W. K. Estes (Ed), Handbook of learning and cognitive processes: Conditioning and behavior theory, vol 2. *Contemporary Psychology*, 21, 871-874.
- Church, R. M. (1979). How to look at data: A review of John W. Tukey's exploratory data analysis. *Journal of the Experimental Analysis of Behavior*, 31, 433-440.
- Church, R. M. (1979). Prescription for research. Review of L. S. Meyers, & N. E. Grossen (Eds), Behavioral research: Theory and practice. *Contemporary Psychology*, 24, 829.
- Church, R. M. (1979). How chimpanzees think. Review of D. Premack (Ed), Intelligence in ape and man. *Contemporary Psychology*, 24, 745-746.
- Church, R. M. (1983). A review of N. L. Collins, and J. A. Nevin (Eds) Quantitative analyses of behavior:Vol 1, Discriminative properties of reinforcement schedules. Cambridge, MA: Ballinger. In *American Journal of Psychology*, 96, 405-428.
- Church, R. M. (1982). Review of M. D. Zeiler and P. Harzem (Eds), Advances in analysis of behaviour, Vol 1. Reinforcement and the organization of behaviour. Chichester: Wiley, 1979. In *American Journal of Psychology*, 29, 24-25.
- Church, R. M. (1983). A review of M. L. Commons, R. J. Herrnstein, & H. Rachlin (Eds), Quantitative analyses of behavior: Matching and maximizing accounts. Vol 2 of Quantitative analyses of behavior. In *Contemporary Psychology*.
- Church, R. M. (1989). The animal mind, revisited. A review of J. Pearce, An introduction to animal cognition. In *Contemporary Psychology*, 163-164.
- Church, R. M. (1989). Review of S. Grossberg (Ed) Neural networks and natural intelligence. *The Quarterly Review of Biology*.
- Church, R. M. (1996). Review of N. J. Mackintosh (Ed.) Animal learning and cognition. Contemporary Psychology
- Church, R. M. (2000). Review of N. A. Schmajuk & P. C. Holland (Eds.) Occasion setting: Associative learning and cognition in animals. *The Quarterly Journal of Biology*, 75, 216.
- Church, R. M. (2003). Review of Gallistel, C. R., & Gibbon, J. The symbolic foundations of conditioned behavior. *American Journal of Psychology*, 116, 661-662.

f. Recently completed research

The topic was to determine the ability of rats to estimate times that were seldom changing or frequently changing. The authors, Kathryn Kalafat and Russell Church, conducted the experiment and examined the results on most days.

Acquisition of temporal durations. Twelve rats were trained on conditions in which they learned to estimate temporal durations between 16-seconds and 256-seconds. They were tested in lever boxes in which they learned to respond efficiently (i.e., they pressed the lever near the time that food was scheduled to be delivered. The rats were tested five days a week, with three 2-hour sessions followed by 30-minute breaks. Rats had about 15 sessions in six phases that included same durations for all session, daily changes of familiar durations, and daily changes of unfamiliar durations,

6. Research Grants (as PI)

1957-58 Experimental Studies of imitative behavior (NIMH M-1812)

1959-64 Behavior in competitive situations (NIMH MH-02902)

1964-71 Characteristics of a punishing stimulus (NIMH MH-08123)

1968-69 Thermal reinforcement (MH-16710)

1971-72 Purchase of a PDP-12 computer system (GB-20108)

1971-74 Suppression of a specific response by punishment (NIMH-19794)

1974-76 The role of contiguity in classical conditioning (NSF GB-43208)

1976-79 Control processes in timing (NIGMS 23247)

1977-78 Development of pattern perception in problem solving (NIMH MH-30404)

1979-81 Properties of the internal clock (BNS-09834)

1982-87 Pharmacological effects on timing behavior (NIMH MH-37049)

1985-88 Temporal discrimination learning (NSF BNS-18293)

1988-08 Temporal discrimination learning (NIMH MH-44234)

1991-93 Categorical aspects of motor timing (NSF BNS-9110158)

1995-99 Categorical timing (NSF SBR 94-14104)

1999-02 Temporal pattern learning (NSF IBN-9816777)

1988-09 Temporal discrimination learning (NIMH MH-44234)

7. Service

(i) to the University (1980-2013)

Chairman, Department of Psychology, February, 1980-June, 1983
Member, University Library Committee, 1980-83
Member of Executive Committee, Center for Cognitive Science, 1980-86
Member of Study Group on Word Processing of Task Force on Computing, summer, 1980 Member of Task Force on Computing, 1982
Chair of Working Group on the Effects of Workstations, 1983-84
Faculty Policy Committee, 3 years

Member of Executive Committee, Institute for Cognitive and Neural Research, 1981-84 Member of Executive Committee, Child Study Center, 1982-84

Member, Social Search Committee of Psychology Department, 1982

Member, Physiological Search Committee of Psychology Department, 1982, 1986

Member of Institutional Animal Care and Use Committee (IACUC), 1985-88

Acting Director of the Primate Laboratory, Brown University, 1986-87

Member of Faculty Committee on Educational Legislation, 1987-89 (Chair in 1989)

Member, Animal Behavior Search Committee of Psychology Department, 1989

Chair of Neurochemical Basis of Behavior Search Committee of Psychology Department, 1993

Chair of tenure committee for a members of the Psychology Department, 1988 and 1989

Chair of Computer Committee, Department of Psychology, 1991-95

Director of Graduate Studies, Department of Psychology, 1992-95

Member of a promotion committee for member of the Psychology Department, 1995

Member of a tenure committee for member of the Psychology Department, 1996-97

Member of Advisory Committee on University Planning (ACUP), 1992-94; Faculty Vice-Chair, 1993-94

Member of Task Force on Disciplinary Procedures for Graduate Students, 1995-96

Chair of Faculty Executive Committee, Grievance Mediation Subcommittee, 1994-95

Vice-Chair of Faculty Executive Committee, 1994-95; Chair, 1995-96

Chair of Space Committee, Department of Psychology, 1996-97

Past Chair, Faculty Executive Committee, 1996-97

Member of the Executive Committee of the Center for Statistical Science, 1996-97

Member of Steering Committee, NCAA Certification and Self-Study, 1996-97

Chair of a promotion committee of Psychology Department, 2001-2002

Member of Space Committee, 2002-3

Member of Search Committee for a Faculty Member in Affective Neuroscience, 2002-3

Member of Task Force on Faculty Governance, 2002-2003

Member of Psychology Curriculum Committee, 2004-2005

Director of Graduate Studies, Department of Psychology, 2005-2006

Member of Departmental Computer Committee, 2001-2006; Acting Chair in 2002

Member of Library Committee, 2004 - 2006, Faculty Vice-Chair, 2005-2006

Member of Computational Faculty Search Committee, 2008-2009

Member of Committee on Medical Faculty Appointments (CMFA), 2012-2015.

Chair of Society of Experimental Psychology, 2013. Host of 108th Annual Meeting of the Society of Experimental Psychologists at Brown University (March 28-30, 2013).

(ii) to the profession

Elected positions

Member of the Board of Governors, Psychonomic Society (1998 – 2003) Chair of Publications Committee, Psychonomic Society, 2003; Member 2000-2003 Member of Executive Committee, Society of Experimental Psychologists (1997 – 2001) President, Eastern Psychological Association, 1991-92

President, Division of Physiological and Comparative Psychology (American Psychological Association), 1991-92

President, Division of Experimental Psychology (American Psychological Association), 1987-88

President of Society for Computers in Psychology, 1981-82

Member of Executive Committee of Division of Experimental Psychology, APA (one term)

Member of Board of Directors, Eastern Psychological Association (1973-75; 1984-86; 1989-92)

Member of Steering Committee, Society for Computers in Psychology (1976-79; 1984-90)

Member of the Nominating Committee, Section J (Psychology), American Association for the Advancement of Science, 1994-97

Editorial positions

Revewing Editor, Timing & Time Perception Reviews, 2015-

Consulting Editor of Learning & Behavior, 1997–2006, 2007–2010, 2015-

Member, Board of Editors, *Journal of the Experimental Analysis of Behavior*, 1998 – 2002, 2004 - 2007

Member of Editorial Board, Comparative Cognition & Behavior Reviews, 2005-

Consulting Editor of Behavior Research Methods, Instruments & Computers, 1992-2003

Consulting Editor, *Journal of Experimental Psychology: Animal Behavior Processes*, 2000-2003

Consulting Editor, *Journal of Experimental Psychology: Human Perception and Performance*, 2000-2002

Member of the Editorial Board of the *Psychological Review*, 1996-99

Consulting Editor, Journal of Comparative and Physiological Psychology, 5 years

Associate Editor, Learning & Motivation, 5 years

Associate Editor, The Behavioral and Brain Sciences

Editor, Animal Learning and Motivation, 1985-88

Co-Editor (with Steven F. Maier) of Special Issue of *Learning and Motivation* on Animal Timing. Volume 22,

Numbers 1/2, February/May, 1991. (252 pages).

Consulting Editor of *Journal of Experimental Psychology: Animal Behavior Processes*, 1992-96

Reviewer of many articles (over 25/year) in other journals on biological, cognitive, and behavioral aspects of animal and human timing, or of mathematical models of the timing process

Advisory positions

Member of Center for Scientific Review (CSR) Reviewers, National Institutes of Health, 2010-2012.

Invited reviewer to F02a Behavioral Neuroscience Fellowship study sections in 2007 - 2009.

Member of Biobehavioral regulation, learning and ethology section (BRLE), NIH 2000-2004, Temporary member 2006.

Member of Interdisciplinary Behavioral Science Center for Mental Health (IBSC) proposals, NIMH, 2001-2003.

Psychobiology Panel, National Science Foundation, 3 years

Biological Sciences Training Panel, National Institute of Mental Health, 1974-79

Member, Biological and Neurosciences Subcommittee, Mental Health Small Grant Research Review Committee, National Institute of Mental Health, 1986-90.

Member of Psychobiology and Behavior Review Committee, National Institute of Mental Health, 1991-93

Member of Psychobiology, Behavior, and Neuroscience Initial Review Group, National Institute of Mental Health, 1993-95

Member of Reviewers Reserve, Alcohol, Drug Abuse, & Mental Health Administration, 1996

Member of Special Review Committee of Neuroscience Review Branch, National Institute of Mental Health, 1996

Co-chair, National Institute of Mental Health Workshop on "Data archiving for animal cognition research," 2001

Member of Advisory Committee on Data Archiving, Psychonomic Society

Member, Publication Committee of the International Society for Comparative Cognition, 2000 – 2002

Member of Search Committee for Editor of Journal of Experimental Psychology: Animal Behavior Processes, 1996, 2002

Co-chair, Committee to arrange Society of Mathematical Psychology Meeting held at Brown University on July 26-29, 2001

Chair of Search Committee for Editor of Behavior Research Methods, Instruments, & Computers (Psychonomic Society), 1998

Member of Advisory Board of the Society for Research on Biological Rhythms, 1986-1992

Advisor to the Natural Sciences and engineering Research Council of Canada (NSERC) regarding an "Allocation Report" prepared by the Canadian psychology community, 1995

Chair of the American Association for the Advancement of Science Section on Psychology (J) Electorate Nominating Committee, 1996-97

Organizations

American Association for the Advancement of Science American Psychological Association American Psychological Society

Eastern Psychological Association Psychonomics Society Society for Mathematical Psychology Society for Neuroscience Society for Comparative Cognition

8. Academic honors

Fellowships

Woodrow Wilson Fellowship, 1952 Special Research Fellowship, 1970-71 (NIMH) National Research Science Award, 1978-79 (NIMH, MH-47064) James McKeen Cattell Award, 1984-85

Honorary Societies

Fellow of Division of Experimental Psychology, APA, 1966
Fellow of American Association for the Advancement of Science, 1969
Fellow of Society of Experimental Psychologists, 1987
Fellow of Division of Physiological & Comparative Psychology, APA, 1989
Fellow of Division of Psychopharmacology and Substance Abuse, APA, 1992
Member of the Psychonomic Society
American Psychological Society (Charter Member)

9. Teaching (Last 3 years)

Semester II, 2010 (Spring)

PSYC1790 (13) Psychology of Timing

PSYC2070 (2) Graduate Core in Learning and Cognition PSYC1990 (1) Experimental Problems (Andra Geana) PSYC2030 (1) Research in Experimental Psychology

Primary research advisor to graduate students (3)

Semester I, 2010 (Fall)

CLPS1192 (20) Experimental Analysis of Animal Behavior and Cognition

CLPS1970 (1) Independent Studies (Sara Evans)

CLPS2096 (1) Directed Graduate Study (David Freestone)

Primary research advisor to graduate students (2)

Semester II, 2011 (Spring) Sabbatical Leave

Semester I, 2011 (Fall)

CLPS1192 (17) Experimental Analysis of Animal Behavior and Cognition

CLPS1980 (1) Directed Research in CLPS

CLPS 2096 (2) Directed Graduate Research (David Freestone, Kathryn Kalafut)

CLPS 2181 (2)	Advanced Topics in Animal and Human Learning
Semester II, 2012 (Spring CLPS1960 (1) CLPS1980(1) CLPS 2096(1)	Directed Reading in CLPS (Evan Lester) Directed Research in CLPS (Chelsea Gordon) Directed Graduate Research
Semester I, 2012 (Fall) CLPS1192 (17) CLPS1980 (1) CLPS 2096 (2) CLPS 2181 (2)	Experimental Analysis of Animal Behavior and Cognition Directed Research in CLPS Directed Graduate Research (David Freestone, Kathryn Kalafut) Advanced Topics in Animal and Human Learning
• • •	Art and Science of Learning Psychology of timing Directed reading in CLPS Directed research in CLPS Directed graduate research (Kathryn Kalafut)
Semester I, 2013 (Fall) CLPS1192 (11) CLPS2096 (1)	Experimental Analysis of Animal Behavior and Cognition Directed graduate research (Kathryn Kalafut)
Semester II, 2014 (Spring CLPS 0050 (14) CLPS 2100 (3) CLPS 2096 (2)	Art and Science of Learning
Semester I, 2014 (Fall) CLPS 1192 (6) Experimental Analysis of Animal Behavior and Cognition CLPS 2096 (1) Directed Graduate Research (Xi Yang)	
Xi Yang completed requirements for MSc in 2014; to be received in 2015	
Primary research advisor Paulo Guilhardi Steven Seow Mika MacInnis Linlin Yi Marcelo Caetano David Freestone Zohar Raz Zephari Kathryn Kalafut	of 21 Ph.D. students at Brown, the most recent are: Ph.D. received in 2005 Ph.D. received in 2006 Ph.D. received in 2007 Ph.D. received in 2009 Ph.D. received in 2009 Ph.D. received in 2012 ni Ph.D. received in 2013 Ph.D. received in 2014

10. Date of the preparation of the document: March 7, 2015