

CURRICULUM VITAE

Ralph Harrop Loring
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Education:

- 1971 B.S. (Biochemistry, with honors) Oklahoma State University,
 Stillwater, Oklahoma
1980 Ph.D. (Neurobiology, minor in immunology) Cornell University, Ithaca, New York

Teaching experience:

- 1975-76 Teaching Assistant, Cornell University, Ithaca, New York
1977-78 Instructor, Duke University Electron Microscope Institute, Duke University
 Marine Laboratory (summer sessions), Beaufort, North Carolina
1985-88 Instructor, Department of Pharmacology, Harvard University Medical School;
 Lecturer, Graduate Course in Neuropharmacology
1988 Lecturer, Graduate Seminar Series on Nicotinic Receptors, SUNY, Stony Brook,
 New York
1989- Lecturer, Bouvé College of Health Sciences, Northeastern University

Awards and Honors:

- 1983-84 The David Mahoney Fellowship of the National Amyotrophic Lateral
 Sclerosis Foundation
1985-88 Recipient, New Investigator Research Award, NIH
1988-90 Recipient, FIRST Award, NIH

Professional Societies memberships:

Society for Neuroscience
American Society for Neurochemistry
American Society of Pharmacology and Experimental Therapeutics
American Association for the Advancement of Science
Coordinator of Boston Area Neuroscience Group (1991-2007)--the Boston chapter
of the Society for Neuroscience.
The Histochemical Society

Postdoctoral Experience:

- 1980-84 Fellow, Department of Pharmacology, Harvard University Medical School (R.E.
 Zigmond)

Professional Experience:

- 1984-89 Instructor, Department of Biological Chemistry and Molecular Pharmacology,
Harvard University Medical School
- 1989-92 Clinical Associate Professor, Department of Pharmaceutical Sciences, Northeastern
University, Boston, MA
- 1989-96 Lecturer of Neurology, Harvard Medical School at Children's Hospital, Boston, MA
- 1989-96 Associate of the Program in Neuroscience, Harvard University Medical School,
Boston, MA

Student Advising:

Served on graduate thesis committees (not my students at the time):

Julie Stickney, NU Toxicology Ph.D. Student
 Tenin Aburto, NU Pharmacology Ph.D. Student
 Wang Ni Tian, NU Pharmacology Ph.D. Student
 Kamelia Behnia, NU Pharmaceutics Ph.D. Student
 Arti Jinsi, NU Pharmacology Ph.D. Student
 Gabriela Greif, NU Pharmacology Ph.D. Student
 Yong Jian Lin, NU Pharmacology Ph.D. Student
 Edward Reverdy, NU Toxicology Ph.D. Student
 Christine Weitasch, Harvard University Dept. Neurobiology Ph.D. Student
 Sujata Vaidyanthan, NU Pharmaceutics Ph.D. Student
 Dana Pedersen, NU Toxicology Ph.D. Student
 Maria Carles, NU Interdisciplinary Ph.D. Student
 Beom-Young Choi, Harvard University Dept. Neurobiology Ph.D. Student
 Megan Pratt, Harvard University Dept. Neurobiology Ph.D. Student
 Ruin Moaddel, NU Medicinal Chemistry Ph.D. student
 Filbert Hui-Pek Hong, Harvard University Dept. Neurobiology Ph.D. Student
 Goldi Kaul, NU Pharmaceutics Ph.D. student
 Qinghuan Xiao, NU Pharmacology Ph.D. student
 Eunice Stagliola, NU Toxicology Ph.D. student
 Sushma Kommareddy, NU Pharmaceutics Ph.D. Student
 Jennifer Weissert, NU Toxicology Ph.D. student
 Matt Dickerson, NU Pharmacology Ph.D. student
 Myank Bhavsar, NU Pharmaceutics Ph.D. Student
 Lipa Shah, NU Pharmaceutics MS student
 Lillian VanVlerken, NU Pharmaceutics Ph.D. Student
 Luis Brito, NU Pharmaceutics Ph.D. Student
 Ritu Kaushik, NU Pharmaceutics MS student
 Sindhura Ganga, NU Pharmaceutics MS student
 Christina Muratore, NU Pharmacology Ph.D. student
 Sheba Goklany, NU Chemical Engineering PhD student
 Bo Ying, NU Pharmaceutics Ph.D. student
 Madhura Deshpande, NU Pharmaceutics MS student
 Sean Kokur, NU Pharm. Sci. Interdisciplinary, Ph.D. Student
 Shardoool Jain, NU Pharmaceutics, Ph.D. student
 Brendan Harmon, NU Pharmacology, Ph.D. student
 Yiting Li, NU Pharmacology, Ph.D. student
 Thom Barchett, NU Interdisciplinary, Ph.D. student
 Shilpa Sonti, NU Interdisciplinary PhD. Student
 Katlynn Bugda Gwilt, NU Pharmacology Ph.D. student

Lucas Cantwell, NU Medicinal Chemistry, Ph.D. Student
Kevin Craig, NU Pharmaceuticals, Ph.D. Student
Lisa Fleischer, NU Pharmacology, Ph.D. Student

Advised graduate students doing laboratory rotations:

Rahul Sharma, MS Student, Pharmacology
Xiaogang Zhang, Ph.D./MS student, Pharmacology
Aviva Blajchman, MS student, Pharmacology
Rashad El-Badrawi, M.S. student, Pharmacology
Alok Sharma, Ph.D. student, Pharmacology
Pi-Shan Hsu, MS student, Pharmacology
Kristen Pavelok, Ph.D. student, Pharmacology
Yu-Yian Wu, MS student, Pharmacology
Tracey Hall, MS student, Pharmacology
Tabassum Husseini, MS student, Pharmacology
Wenbo Tan, Ph.D. student, Pharmacology
Yen-Hua Tang, MS student, Pharmacology
Thanh Tran, Ph.D. student, Pharmacology
Hong Gao, Ph.D. student, Pharmacology
Waleed Swelieh, Ph.D. Student, Pharmacology
Prashanti Modadugu, M.S. Student, Pharmacology
Lavesh Gwalani, M.S. Student, Pharmacology
Negin Behazin, Ph.D. Student, Pharmacology
Scott Leppanen, MS student, Pharmacology
Visalakshi Visalakshi, MS student, Pharmacology
Vishnu Hosur, MS/Ph.D. student, Pharmacology
Onkar Vase, MS student, Pharmaceuticals
Hari Chikyala, MS student, Biotechnology
Geeta Gwalani, MS student, Pharmacology
Gaurav Gogri, MS student, Pharmacology
Emily Thomas, MS student, Pharmacology
Priyanka Anandajawali, MS student, Pharmacology
Brijesh Garg, MS student, Pharmacology
Thomas Koperniak, Ph.D. Student, Pharmacology
Vartika Mishra, MS student, Pharmacology
Nehul Shah, MS student, Pharmacology
Hiral Patel, MS student, Pharmacology
Ketan Deotale, MS Biotechnology
Rohit Vyasamneni, MS Biotechnology
Sangram Yadav, MS Biotechnology
Sharah Ragunathan, MS Biotechnology
Bharti Patel, MS Biotechnology
Vatsal Oza, MS Biotechnology
Salonee Parikh, MS Pharmacology
Pragalath Sundararajan, MS Biotechnology
Abishek Chandrashekar, MS Biotechnology
Sharath Chandra Madasu, MS Pharmacology
Nikhil Soni, MS Biotechnology
Namrata Prasad, MS Biotechnology
Jessica Jimenez, MS Pharmaceutical Science
Guarang Patel, MS Pharmacology
Anagha Sawant, MS Pharmacology
LingLing Guo, MS Pharmaceuticals
Dhaval Oza, MS Pharmacology

Ngoc Ha, MS Pharmacology
Michelle Pires, MS Pharmacology
Prerana Malwadkar, MS Pharmaceutics
Tapan Dave, MS Pharmacology,
Ting Wu, MS Pharmacology,
Yichen Chen, MS Pharmaceutics,
Yong Szeto, MS Pharmacology,
Ravi Challa, MS Pharmaceutics,
Yi Xu, MS Pharmaceutics,
Vinita Chaudhari, MS Pharmacology,
Jason Wickman, MS Pharmacology,
Grishma Pawar, MS Pharmacology,
Kiran Deshpande, MS Pharmaceutics
Hangqing Lin, MS Pharmacology
Pavithra Krishnaswami, MS Pharmaceutics
Tam Nguyen, MS Medicinal Chemistry
Trung Nguyen, MS Pharmaceutical Sciences
Vinita Doshi, MS Pharmaceutical Sciences
Shivani Krovvidi, MS Biotechnology
Rucha Adhav, MS Biotechnology
Alexandra Rezvaya, MS Pharmacology
Bhargav Tilak, MS Biotechnology
Bhakti Kadav, MS Biotechnology
Ankita Bhattathiripad, MS Pharmaceutical Sciences
Delong Zhou, MS Pharmaceutical Sciences
Sneha Sukumaran, MS Pharmacology
Sweta Swaminathan, MS Pharmacology
Aditya Ansodaria, MS Biotechnology
Anurag Wadhavkar, MS Pharmacology
Babu Ram Prasad Saravanan, MS Biotechnology
Gauri Mahimkar, MS Pharmaceutical Sciences
Jaya Prakash Thummapudi, MS Biotechnology
Sushma Krishnamurthy, MS Biotechnology
Swetha Iyer, MS Biotechnology
Vijay Ramesh, MS Biotechnology
Zhiyuan Wang, MS Pharmaceutical Sciences
Yaamini Subramanian, MS Biotechnology
Kritika Mukherjee, MS Biotechnology
Xinbo Luo, MS Pharmacology
Madhave Upadhyay, MS Biotechnology
Aayush Pankaj Agarwal, MS Biotechnology
Akshitha Rameshbabu, MS Biotechnology
Anish Deshpande, MS Pharmaceutical Sciences
Parnika Dalvi, MS Biotechnology
Sarulatha Thulasi Raman, MS Biotechnology
Shravani Godkar, MS Biotechnology
Sreeharshini Oruganti, MS Biotechnology
Tanya Shah, MS Biotechnology
Gayatri Patankar, MS Biotechnology
Shradda Kamath, MS Biotechnology
Riya Chhowala, MS Biotechnology
Remitha Mathivani Vinayakamoorthy, MS Biotechnology
Palak Shah, MS Biotechnology
Meghana Bantwal, MS Biotechnology

Shivani Bhawsar, MS Biotechnology
 Gargi Ramdasi, MS Biotechnology
 Pranjali Rumale, MS Biotechnology
 Sayani Mukherjee, MS Biotechnology
 Gauri Oza, MS Biotechnology
 Nirzari Shah, MS Biotechnology
 Mitali Gupta, MS Biotechnology
 Khushboo Kadam, MS Biotechnology
 Maria Mariadassou, MS Biotechnology
 Kushboo Agarwal, MS Biotechnology
 Varnika Arora, MS Biotechnology
 Anasemon Meshreky, MS Biotechnology
 Drishti Parwanda, MS Biotechnology
 Hirva Patel, MS Biotechnology
 Aarsheya Amin, MS Biotechnology
 Tanya Malpani, MS Biotechnology
 Priyanka Sahni, MS Biotechnology
 Amrutha Varshini Saravana Kumar, MS Biotechnology
 Akshara CP, MS Biotechnology
 Rewati Gokhale, MS Biotechnology
 Aastha Jain, MS Biotechnology
 Jazib Khan, MS Biotechnology
 Yongcheng Lu, MS Pharmaceutical Science
 Ashika Saraf, MS Biotechnology
 Jayshree Agrawal, MS Biotechnology
 Aishwarya Gaikwad, MS Biotechnology
 Rujul Tamane, MS Biotechnology
 Venkata Sai Gopal Nanduri, MS Biotechnology
 Yash Shrinivash Bichu, MS Biotechnology
 Shantanu Burkul, MS Biotechnology
 Sourabh Pujari, MS Biotechnology
 Pooja Sawlani, MS Biotechnology
 Sathya Sri Balakrishnan, MS Biotechnology
 Shreya Prajapat, MS Biotechnology
 Soham Kale, MS Biotechnology
 Rucha Vinayak Pawar, MS Biotechnology
 Bryce Axe, MS Biological Engineering
 Shubhrra Neel Chaudhari MS Biotechnology
 Devisha Vitthalbhai Dhameliya, MS Biotechnology
 Jash Doda, MS Biotechnology
 Vaishali Jain, MS Bioinformatics
 Ashwath (Narendran) Maheswari (Arunan Latha), MS Biotechnology
 Vishnu Balakrishnan Nair, Biotechnology
 Khushi Patel, MS Biotechnology
 Neha Thakkar, MS Biotechnology
 Anjiri Upadhye, MS Biotechnology

Major advisor to students completing graduate degrees with theses:

Yu Xie, Ph.D. (Degree received in 1993)
 Yamin Dou, MS (Degree received in 1993)
 Ruin Moaddel, NU Medicinal Chemistry Ph.D. (with Robert Hanson, Degree received in 1999)
 Waleed Sweileh, Ph.D. (Degree received in 2000)
 Hee Kyung Lee, MS (Degree received in 2002)

Adham Abutaha, Ph.D. (Degree received in 2003)
Vishnu Hosur, Ph.D. (Degree received in 2010)
Thomas Koperniak, Ph.D., American Foundation for Pharmaceutical Education
fellow 2009 (Degree received in 2012)
Hiral Patel, Ph.D. (Degree received in 2017)
Bijesh Garg, Ph.D. (Degree received in 2017)
Anish Deshpande, MS (Degree received in 2020)
Zixuan Yan, MS (Degree received in 2023).

Advisor to five undergraduates from the University of Bath (UK) or University College
London doing external training research projects towards a B.Sc. in Biochemistry
Ashley Pike, March -September, 1991. Mr. Pike received the Glaxo Placement
Award at Bath University in 1992, partly based on work in this laboratory
Christine Rossant, March -September, 1992
Mark Cragg, March -September, 1993
Judith McKay, March-September, 1994 and June-September, 1995
Assad Khan, March-August, 2004, Univ. London

Advisor to undergraduates from Northeastern University doing laboratory rotations:
Abdullah Baaj. 1993-1995. Mr. Baaj was co-winner of the NU Dean's Research
Award based on work in this laboratory
Fouzia Abisourour. 1993-1994
Erica Waugh Summer 1997 (Co-advising with Dr. James Stellar during a joint
NU RSDF project)
Kristen Danischewski Fall 1997-1999 (Co-advising with Dr. James Stellar
during a joint NU RSDF project)
Sean Sherman 2004-2005 (Provost Undergraduate Research Grant)
Jennifer Tarnaki, Spring 2009 (Provost Undergraduate Research Grant)
Joe Musacchia, Summer 2009-Spring 2011 (Matz Co-op Fellowship)
Elizabeth Kyer, Spring 2012
Kyu Won Kim, Summer 2012
Yong Szeto, Fall 2012-13, Mr. Szeto became a MS student in the lab (Provost
Undergraduate Research Grant)
Kaci Coveleski, Fall 2013, (Provost Undergraduate Research Grant)
Amro Alhelawe, Spring 2013-14
David Wu, BS Pharm.Sci. Fall 2015-Spring 2016.
Michelle Nguyen, BS Pharm. Sci. Spring 2016
Halldor Arnarson, BS Pharm. Sci. Fall 2016-Spring 2017
Huang Lee BS Pharm. Sci. Fall 2016-Spring 2017
Diana Ghisa, BS Biology Fall 2021
Grant Tucker, BS Biology Fall 2019-Spring 2022 (Provost Summit Award)
Aditi Nimbalkar, PharmD student, Summer 2023-Spring 2024

Supervised lab volunteers: Jay Boltax, Sheba Goklany

Current MS students not doing thesis:

(Rishivika) Shruthi Vankadara, MS Biotechnology
Hetvanshi Tejasbhai Vankawala, MS Biotechnology
Nevetha Vijayan, MS Biotechnology
Eshita Gupta, MS Biotechnology
Jeevikaa Velmurugan, MS Biotechnology
Yash Bharat Gada, MS Biotechnology
Arya Lokhande, MS Biotechnology

Current Undergraduate Students:

Eleanor Sanders, BS Health Sciences
Sephora Teferi, BS Neuroscience
Giana Meneo, BS Biology

Director, Northeastern University Graduate Program in Pharmacology (A subset of the Biomedical Science Graduate Program) 1994-2003.

Chair, Dept. Pharmaceutical Science Graduate Education Committee 2001-2010

Advisor, MS program in Pharmacology (a specialization of the Pharmaceutical Science Graduate Program) 2003-2020

Invited Presentations:

Spring, 1989. Northeastern University Biomedical Science Colloquium Series, Dr. Mehdi Boroujerdi, host
November, 1989. Dept. Pharmacology, Cornell University, Ithaca NY “Nicotinic and NMDA receptors in chick retina”, Dr. Robert Oswald, host
June, 1990. Dept. Pharmacology, University College, London. Dr. David Colquhoun, host.
June, 1990. Dept. Biochemistry, University of Bath, Bath, England. Dr. Susan Wonnacott, host
July 23, 1990. European Society for Neurochemistry, Leipzig, German Democratic Republic
August, 1990. Dept. of Physiology, University of Geneva, Geneva Switzerland. Dr. Daniel Bertrand, host
August, 1990. Dept. of Molecular Neurobiology, Pasteur Institute, Paris, France. Dr. Michele Roa, host
Fall 1990, Dept. of Neuroscience, Pfizer Central Research, Groton, Conn. Dr. W.Frost White, host
Spring 1991, Dept. Physiology, University of Pittsburgh, Pittsburgh, PA. Dr. Elias Aizenman, host
Spring 1991, Massachusetts College of Pharmacy, Boston, MA. Dr. Timothy Maher, host
March 22, 1992 Cambridge NeuroScience
May 19, 1992. Dept. of Neurology, Children’s Hospital, Boston MA. Dr. Stewart Lipton, host
May 26, 1992 Mailman Research Laboratories, McLean Hospital, Belmont MA. Dr. Sherry Bursztajn, host
March 9, 1994 “Arsenic & old worms; Old reagents as new probes for nicotinic receptors”, Biology Dept., Northeastern University, Dr. Sue Powers-Lee, host.
May 9, 1994 Rho Chi Speaker, Northeastern University
November 13, 1995. “Epibatidine, a promising ligand for neuronal nicotinic receptors”, Raddison Hotel, San Diego, CA. Sponsored by Research Biochemicals, International and Amersham International.
March 19, 1997. “Roles of Disulfide Bonds in Regulating Ligand Gated Receptor Channel Function.” Pharmacology Dept., B.U. School of Medicine, Dr. Susan Leeman, host
November 3, 2000. Invited speaker “Evidence against $\alpha 4\beta 2$ nicotinic receptor stabilization during nicotine-induced up-regulation: Studies with cycloheximide and brefeldin A.” *10th Neuropharmacology Conference*, 2000, New Orleans, LA
March 2, 2012. "Investigating Novel Nicotinic Receptor Chaperones and Signaling Systems". Dept. of Pharmacology, University of Florida, Gainesville, FL, Dr. Roger Papke, host.
April 13, 2018. “ $\alpha 7$ Nicotinic Receptor Chaperones and Unconventional Signaling.” Department of Biochemistry, Oklahoma State University, Stillwater OK, Dr. John Gustafson, host.

October 23, 2024. "Chaperone assisted assembly of $\alpha 7$ -nicotinic receptors". Ion Channel Modulation Symposium, Harvard Medical School

Present Position:

1998-Present Associate Professor, Department of Pharmaceutical Sciences, Northeastern University, Boston, MA

Grant History for Ralph Loring

External Funding:

National Institute of Neurological Disorders and Stroke, NS22472, "*Characterization of Neuronal Nicotinic Receptors*"

\$54,377 first year direct cost (2/1/89-8/31/89), \$30,346 indirect.

\$82,387 second year direct cost (9/1/89-8/31/90), and \$49,964 indirect.

This was a FIRST award brought from Harvard University Medical School to study the effects of neuronal bungarotoxin on neuronal nicotinic receptors.

Pfizer Central Research, "*Novel excitatory amino acid agents*",

\$35,327 for 1 year direct costs (1/1/91-12/31/91). \$4,416 indirect.

This was a contract to study the effects of a potential drug that blocks glutamate receptors.

National Institute of Neurological Disorders and Stroke, NS22472, "*Characterization of Neuronal Nicotinic Receptors*",

\$877,419 over 5 years (9/1/90-8/31/95).

First year (9/1/90-8/31/91), \$120,675 direct, \$63,049 indirect.

Second year (9/1/91-8/31/92) \$109,708 direct, \$62,501 indirect.

Third year (9/1/92-8/31/93) \$109,001 direct, \$60,714 indirect.

Fourth year: (9/1/93-8/31/94) \$114,404 direct, \$61,134 indirect.

Fifth year: (9/1/94-8/31/95) \$111,540 direct, \$64,693 indirect.

This R01 was a competing renewal of the FIRST award to study the effects of reducing and oxidizing reagents on neuronal nicotinic receptors.

Smokeless Tobacco Research Council, Inc. #0273, "*Novel Probes for Nicotine Binding Sites*" over 3 years (1/1/91-12/31/93).

First year \$27,000 direct, 3,375 indirect.

Second year, \$28,629 direct, \$3579 indirect.

Third year, \$30,347 direct, \$3,794 indirect.

This grant was to design novel drugs to block the function of neuronal nicotinic receptors. Dr. Gerald S. Jones Jr. was a collaborator on this grant to synthesize novel organochemicals.

Advanced Tobacco Products (ATP), Inc., unspecified and unsolicited grant, \$10,000 with unrestricted dates.

This grant was a technology transfer agreement with ATP Inc., to have a right of first refusal on any patents that might have been discovered during the time of NIH grant NS22472 (9/1/90-8/31/95).

Claims on future discoveries have now lapsed.

Research Biochemicals Incorporated (1994) contract for \$1,000 to test various batches of the snake toxin α -bungarotoxin for pharmacological activity.

Smokeless Tobacco Research Council, "*Heterobifunctional Ligands for labeling neuronal nicotinic receptors*" (1/1/94 to 12/31/96).

Dr. Gerald S. Jones, Jr. started as the PI on this grant but after Dr. Jones left Northeastern for the Mass. College of Pharmacy, and then left the Mass. College of Pharmacy, I ended up supervising both his student Ruin Moaddel and the research. This grant was to continue drug design for blocking neuronal nicotinic receptors based on the results of the previous Smokeless Tobacco Research Council grant (1/1/91-12/31/93).

National Institute of Neurological Disorders and Stroke, NS22472, "Characterization of Neuronal Nicotinic Receptors",
\$567,835 over 3 years (1/1/97-12/31/99).
No cost extension completed in 2000.

Internal Funding:

BRSG Instrument Grant (With Jonathan Freedman): \$5,195 direct only (1992)

RSDF (Northeastern University Research and Scholarship Development Fund) proposal funded with Dr. James Stellar: "*Nicotine Intracranial Self-Administration (ICSA)*" for \$9,999 July 1, 1997-June 30, 1998. The object is to determine if rats will work to self-inject nicotine into various brain sites to test theories of how nicotine acts as an addictive drug.

Bouve Faculty Bridge Award "*A Biological Switch for Amplifying and Retaining Transcription Factor Signaling*" for \$3400, 6/1/11-6/30/12

Since 2000, I have funded my laboratory research with honoraria obtained as a consultant evaluating grant applications for a foundation that wishes to remain anonymous. Currently, this amounts to \$37,000/year.

Service

1992-2003 Coordinator, Boston Area Neuroscience Group (BANG), the Boston chapter of the Society for Neuroscience and co-organizer (With Dr. James Stellar, NU Psychology) of the Boston Area Neuroscience Group (BANG) meetings for 1992, 1993, and 1996.

Manuscript Reviewer, Journal of Neuroscience, Journal of Neurochemistry, Journal of Physiology, Synapse, Biochemical Pharmacology, Journal of Neuroinflammation

Consultant with Research Biochemicals, International. Produced the Nicotinic Receptor page for the RBI Handbook of Receptor Classifications 1st & 2nd editions.

Consultant with Partidge Films, Ltd., of Bristol, UK for a documentary film on Cobras prepared for the Discovery Channel.

Ad Hoc Reviewer for National Institutes of Health, Israeli Science Foundation, and the National Science Foundation, as well as Reviewer, Research and Scholarship Development Fund for Division of Research Management, Northeastern University

1997-1999 Member, Northeastern University Faculty Senate

1989-2003 Chairman, Dept. of Pharmaceutical Sciences Seminar Committee

1994-2022 Program Director, Pharmacology Graduate Program.

1994-2022 Member, Pharmaceutical Sciences Graduate Education Committee.

1994-2000 Member, University Graduate Council

1998-1999 Member, University Graduate Council Executive Committee

1995-2002 Member, University Graduate Council committee on New Programs

1995-1999 Member of Pharmacy Affairs Committee.

1996-1997 Member, Pharmacy Program Academic Standing Appeals Committee

1997-1999 Member, Bouvé College Academic Standing Appeals Committee

1996-1997 Member, Non-traditional Pharm. D. task group

1996 Member, Pharmacy Program Progression Requirements subcommittee

1997-1998 Member, (with Jonathan Freedman and Barbara Waszczak) Special Graduate Program self-study report committee

1997-1999 Member of Neuroscience Task Force to develop a Ph.D. program in Neuroscience at Northeastern University.

1998-2000 Member, (with Barbara Waszczak and Bob Schatz), Pharmaceutical Sciences Graduate Task Force.

2000-2003 Organizer of the Biomedical Science Colloquium Series

| | |
|--------------|---|
| 2003 | Chair of the Pharmacology Core Teaching Initiative Committee |
| 2002-2005 | Chair of the Bouve Graduate Curriculum Committee (Responsible for semester conversion oversight of all Bouve Graduate programs in 2003) |
| 2003-2006 | Chair or member, Department merit committee |
| 2003-2004 | Member, School of Pharmacy Academic Recruiting and Transfer committee |
| 2003-2004 | Chair, University Graduate Council Evaluation of the Pharmacy program |
| 2000-2006 | Member, University Graduate Council New Programs Committee (Chair, 2004-2006) |
| 2005 | Graduate Council Ad Hoc Committee for evaluating graduate programs |
| 2005-2010 | Chair, Bouve Graduate Academic Affairs Committee |
| 2007 | Chair of ad hoc committee for evaluating Pharmaceutical Science Graduate Curriculum |
| 2008 | Chair of ad hoc committee for establishing a Graduate Pharmaceutical Science Laboratory Course. |
| 2009 | Member of School of Nursing Dean's Search Committee |
| 2010 | Member, Dept. Pharmaceutical Science Medicinal Chemistry faculty Search |
| 2005-2010 | Member, University Graduate Council |
| 2010-2022 | Member, Bouve Graduate Curriculum Committee |
| 2009-2019 | Member, School of Pharmacy Honors and Awards Committee |
| 2009 | Member, Provost's ad hoc committee for PhD Thesis Completion awards |
| 2011 | Member, Senate Academic Unit Review Committee |
| 2012-2017 | Member, School of Pharmacy Academic Affairs Committee |
| 2012-2020 | Chair, Bouve College Graduate Curriculum Committee |
| 1989-Present | Member, Northeastern University Radiation Safety Committee. |
| 2012-Present | Chair, Northeastern University Institutional Biosafety Committee |
| 2012-Present | Member, Northeastern University Laboratory Safety Committee |
| 2016-Present | Department Pharmaceutical Science Safety Officer |
| 2021-2023 | Reviewer, Northeastern Tier1 awards |
| 2021-2023 | Member, Bouve Faculty Office Task Force |

2021-2023 Member, COE/Bouve Safety Officer Committee

2022-Present Member, School of Pharmacy Honors and Awards Committee

Bibliography:

Mitchell, E.D., Riquetti, P., Loring, R.H., and Carraway, K.L. Quaternary structure of *B. subtilis* α -amylase: Anomalous behavior in SDS. *Biochimica et Biophysica Acta* **295**:314-322 (1973).

Loring, R.H. and Salpeter, M.M. Denervation increases turnover rate of junctional acetylcholine receptors. *Proc. Natl. Acad. Sci. USA* **77**:2293-2297 (1980).

Levitt, T.A., Loring, R.H. and Salpeter, M.M. Neuronal control of acetylcholine receptor turnover rate at a vertebrate neuromuscular junction. *Science* **210**:550-551 (1980).

Loring, R.H., Jones, S.W., Matthews-Bellinger, J. and Salpeter, M.M. ^{125}I - α -Bungarotoxin: Effects of radiodecomposition on specific activity. *J. Biol. Chem.* **257**:1418-1423 (1982).

Loring, R.H., Chiappinelli, V.A., Zigmond, R.E. and Cohen, J.B. Characterization of a snake venom neurotoxin which blocks nicotinic transmission in the avian ciliary ganglion. *Neuroscience* **11**:989-999 (1984).

Loring, R.H., Dahm, L.M. and Zigmond, R.E. Localization of α -bungarotoxin binding sites in the ciliary ganglion of the embryonic chick: An autoradiographic study at the electron microscopic level. *Neuroscience* **14**:645-660 (1985).

Loring, R.H. A method for recording agonist-induced depolarizations in small autonomic ganglia. *J. Neurosci. Methods* **12**:241-248 (1985).

Salpeter, M.M. and Loring, R.H. Nicotinic acetylcholine receptors in vertebrate muscle: Properties, distribution, and neuronal control. *Progress in Neurobiol.* **25**:297-325 (1986).

Loring, R.H., Andrews, D., Lane, W. and Zigmond, R.E. Amino acid sequence of toxin F, a snake venom toxin that blocks neuronal nicotinic receptors. *Brain Research* **385**:30-37 (1986).

Sah, D.W.Y., Loring, R.H. and Zigmond, R.E. Long-term blockade by toxin F of nicotinic synaptic potentials in cultured sympathetic neurons. *Neuroscience* **20**:867-874 (1987).

Loring, R.H. and Zigmond, R.E. Ultrastructural distribution of ^{125}I -toxin F binding sites on chick ciliary neurons: Synaptic localization of a toxin that blocks ganglionic nicotinic receptors. *J. Neurosci.* **7**:2153-2162 (1987).

Lipton, S.A., Aizenman, E. and Loring, R.H. Neural nicotinic acetylcholine responses in solitary mammalian retinal ganglion cells. *Pfluegers Arch.*, **410**:37-43 (1987).

Loring, R.H. and Zigmond, R.E. Characterization of neuronal nicotinic receptors by snake venom neurotoxins. *Trends in Neurosci.*, **11**:73-78 (1988).

Loring, R.H., Sah, D.W.Y., Landis, S.C. and Zigmond, R.E. The ultrastructural distribution of putative nicotinic receptors on cultured neurons from the rat superior cervical ganglion. *Neuroscience*, **24**:1071-1080 (1988).

Zigmond, R.E. and Loring, R.H. Characterization and localization of ganglionic nicotinic receptors using neuronal bungarotoxin. In: *NATO advanced research workshop on Nicotinic Acetylcholine Receptors in the Nervous System*, F. Clementi, Editor. Springer Verlag, Berlin, 1988, pp. 31-39.

Aizenman, E., Lipton, S.A. and Loring, R.H. Selective Modulation of NMDA responses by reduction and oxidation. *Neuron*, **2**:1257-1263 (1989).

Loring, R.H., Aizenman, E., Lipton, S.E. and Zigmond, R.E. Characterization of nicotinic receptors in chick retina using a snake venom neurotoxin that blocks neuronal nicotinic receptor function. *J. Neurosci.* **9**:2423-2431 (1989).

Loring, R.H., Schulz, D.W. and Zigmond, R.E. Characterization of neuronal nicotinic receptors using neuronal bungarotoxin. *Progress in Brain Res.* **79**:109-116 (1989).

Loring, R.H. Agmatine acts as an antagonist of neuronal nicotinic receptors. *Brit. J. Pharm.* **99**:207-211 (1990).

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