

## CURRICULUM VITAE

### LOIS D. LEHMAN-McKEEMAN, Ph. D.

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#### PERSONAL DATA

Born June 6, 1959; Harrisburg, Pennsylvania  
Marital Status Married

#### EDUCATION

1986 Ph. D., Toxicology  
Dept. Pharmacology, Toxicology and Therapeutics  
University of Kansas Medical Center  
Advisor: Dr. Curtis D. Klaassen

1982 B.S., Toxicology, Magna Cum Laude  
Philadelphia College of Pharmacy and Science

#### EMPLOYMENT

2004-Present Distinguished Research Fellow, Discovery Toxicology  
Bristol Myers Squibb Co.  
Responsible for leading investigative toxicology research in drug  
discovery and development.

Since 2013, oversee the work of a department of 60 staff in drug  
discovery toxicology

2002-2004 Research Fellow, Discovery Toxicology  
Bristol-Myers Squibb Company

2001-2002 Senior Principal Research Scientist, Discovery Toxicology  
Bristol-Myers Squibb Company

1994-2001 Principal Research Scientist, Biochemical Toxicology  
Human Safety Department, Miami Valley Laboratories  
Procter and Gamble Co.

1993-1994 Senior Scientist, Biochemical Toxicology  
Procter and Gamble Co.

1991-1993 Group Leader, Biochemical Toxicology  
Procter and Gamble Co.

1986-1991 Biochemical Toxicologist  
Procter and Gamble Co.

1981 Undergraduate Toxicology Traineeship  
Lilly Research Laboratories, Toxicology Division  
Eli Lilly and Company, Greenfield, IN  
Advisor: Dr. John Emmerson

## **AWARDS**

2015 Ambassador of Toxicology, Mid Atlantic Regional Chapter,  
Society of Toxicology

2008 Fellow of the American Association for the Advancement of  
Science (AAAS), Pharmaceutical Sciences

2006 George H. Scott Award for Scientific Achievement, Toxicology  
Forum

2005 James B. D. Palmer Award for Excellence in Drug Development  
(This award is the highest level of recognition within the  
Pharmaceutical Research Institute at BMS)

2004 John Doull Award in Toxicology (Central States Chapter, Society  
of Toxicology)

2003 Achievement Award, Society of Toxicology

2000 Fellow, Academy of Toxicological Sciences

1994 Robert A. Scala Award in Toxicology  
(for research excellence in an industrial laboratory)

1988 Selected to participate in Plenary Session  
Society of Toxicology Annual Meeting

1987 First Place, Graduate Student Research Award  
Metals Specialty Section, Society of Toxicology

1985-1986 Procter and Gamble Predoctoral Fellowship  
University of Kansas Medical Center

1983-1985 NIEHS Predoctoral Fellowship  
University of Kansas Medical Center

## **MEMBERSHIP IN PROFESSIONAL SOCIETIES**

Society of Toxicology (Full Member)  
Mechanisms Specialty Section  
Molecular Biology Specialty Section  
Drug Discovery Toxicology Specialty Section  
Mid-Atlantic Chapter (2001-Present)  
Ohio Valley Chapter (1986-2001)  
American Association for the Advancement of Science  
New York Academy of Sciences

## **ELECTED POSITIONS IN PROFESSIONAL SOCIETIES**

2011-2015	Society of Toxicology Presidential Chain 2014-15: Past President 2013-14: President 2012-13: Vice President 2011-12: Vice-President-Elect
2010-2015	Board of Directors, Academy of Toxicological Sciences Secretary-Treasurer, 2012-2015
2008-2010	Secretary-Treasurer, Mechanisms Specialty Section, Society of Toxicology
2008-2011	Awards Committee, Society of Toxicology
2000-2002	Councilor, Society of Toxicology
2001-2004	Director, Academy of Toxicological Sciences

## **APPOINTMENTS TO SOCIETAL/PROFESSIONAL COMMITTEES**

2015	Nominating Committee, Chairperson, Society of Toxicology
2011-2013	Scientific Program Committee, Society of Toxicology (Co-chair in 2011-12 and Chair, 2012-13)
2008-Present	Board of Trustees, International Life Sciences Institute, Health Effects Science Institute
2005-2007	International Life Sciences Institute, Health Effects Science Institute, Emerging Issues Committee
2004	NIH SBIR Peer Review Panel: Metabonomic Applications
2004	NIH : Scientific Organizing Committee for the NIH Roadmap Workshop on Predictive Toxicology and ADME
2003-2006	International Program on Chemical Safety (WHO)

	Human Relevance of Animal Bioassays, Expert Committee
2001-2003	International Life Sciences Institute Risk Science Institute Steering Committee; Assessing human relevance of animal tumors
2001-2002	International Life Sciences Institute, Health Effects Science Institute; Application of mechanistic data into risk assessment (Co-chair)
1997-2000	Society of Toxicology, Placement Committee Co-Director, 1998-99; Director, 1999-2000
1995-1996	NIH, Safety and Occupational Health Study Section Small Business Innovation Research Program
1992-1996	Society of Toxicology, Continuing Education Committee Chairperson, 1994-95

#### **APPOINTMENTS TO EXTERNAL ADVISORY COMMITTEES**

2014-Present	Scientific Advisory Board, US Environmental Protection Agency
2006-2010	Human Subjects Review Board, US Environmental Protection Agency
2006-2009	External Science Advisory Committee, Rutgers University Graduate Program in Toxicology
2003	USEPA Science Advisory Panel (FIFRA): Proposed Science Policy on PPAR- $\alpha$ agonist mediated hepatocarcinogenesis in rodents and relevance to human health risk assessments
1998-2008	External Science Advisory Committee, Environmental Health Science Center, Institute of Chemical Toxicology, Wayne State University
1999-2001	Carcinogenesis Technical Implementation Panel, Chemical Industry Institute of Toxicology
1998	International Agency for Research on Cancer (IARC) Monographs Working Group (target organ selectivity: kidney and urinary bladder)
1997	IARC Working Group on Carcinogenic Mechanisms that may be Species-Specific
1992-1995	American Water Works Association Research Foundation Bromate Toxicity Advisory Panel

1990 EPA Peer Review Workshop, "Male Rat Specific Hyaline Droplet Nephropathy "and Science Advisory Board representation

#### **APPOINTMENTS TO INSTITUTIONAL COMMITTEES**

1999-2001 Chairman, IACUC, Procter and Gamble Co.  
1995-1998 Institutional Animal Care and Use Committee (IACUC), P&G

#### **EDITORIAL APPOINTMENTS**

2002-2011 Editor-in-Chief, Toxicological Sciences  
1997-2002 Toxicological Sciences, Associate Editor

#### **APPOINTMENTS TO EDITORIAL BOARDS**

2016-present Current Opinion in Toxicology  
1995-1997 Fundamental and Applied Toxicology  
1995-present Drug Metabolism and Disposition  
1992-2001 J. Pharmacological and Toxicological Methods

#### **JOURNAL REVIEWER**

Analytical Biochemistry  
Biochemical Pharmacology  
Cancer Chemotherapy and Pharmacology  
Chemico-Biological Interactions  
Chemical Research in Toxicology  
Food and Chemical Toxicology  
J. Pharmacology and Experimental Therapeutics  
J. Toxicology and Environmental Health  
Toxicology and Applied Pharmacology  
Toxic Substance Mechanisms  
Toxicology Letters  
Xenobiotica

#### **ACADEMIC APPOINTMENTS**

##### **Adjunct Associate Professor**

Dept. Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center

Dept of Pharmacology and Toxicology, Rutgers University

#### **RESEARCH TRAINEES**

##### M. S. Candidates

Sharon B. Stuard, University of Cincinnati (1994-1996)  
Jeffrey Vassallo, Lehigh University (2005-2008)  
Julie Panzica-Kelly, Thomas Jefferson Univ. (2008-2010)

##### Ph.D. Candidates

Jeffrey Vassallo, Lehigh University (2008-2012)

##### Post-doctoral fellows

Dr. Stephanie Born, Procter and Gamble (1996-1998)  
(sponsored by Research Institute for Fragrance Materials)

Dr. Mathew Dieter, Procter and Gamble

(2000-2001)

## INVITED PRESENTATIONS

- 10/15 Toxicology Ambassador Award Lecture, Mid-Atlantic Chapter, Society of Toxicology
- 6/15 Keynote Lecturer, AsiaTox (Jeju, Korea)
- 4/14 St. Johns University, College of Pharmacy and Allied Health
- 3/15 Society of Toxicology, Leadership Session
- 10/13 Oxford University Press Journals Day
- 10/13 Lone Star Regional Chapter, Society of Toxicology
- 10/12 Central States Chapter of Society of Toxicology
- 11/10 Northern California Regional Chapter of Society of Toxicology
- 3/09 Society of Toxicology, Drug Transporter Symposium
- 3/09 Society of Toxicology, Metabonomics Symposium
- 11/08 Lehigh University, Department of Biological Sciences
- 6/08 Louisiana State University, School of Medicine, Dept. Pharmacol. Toxicol.
- 11/07 University of Utah, Department of Pharmacology and Toxicology
- 7/07 International Congress of Toxicology, Montreal, Canada
- 6/07 Gordon Research Conference on Toxicogenomics, Keynote speaker
- 3/07 Society of Toxicology, Drug Discovery Symposium
- 7/07 Toxicology Forum: Xenobiotic transporters
- 6/06 American Chemical Society, Prospectives Meeting on Mechanisms of Toxicity
- 3/06 Society of Toxicology: Genomics Symposium
- 12/05 American College of Veterinary Pathology, Annual Meeting
- 11/04 American College of Veterinary Pathology, Annual Meeting
- 9/04 Central States Chapter, Society of Toxicology
- 10/03 University of the Sciences, Philadelphia, PA
- 9/03 New York Medical College, Dept. of Environmental Pathology and Toxicology
  
- 4/03 NTP Conference on Thyroid Toxicants
- 12/02 IBC Conference on Predictive Toxicology: Metabonomics
- 7/01 International Congress of Toxicology, Brisbane Australia
- 5/01 US National Toxicology Program
- 3/01 USFDA, Office of Cosmetics and Colors
- 1/01 Research Institute for Fragrance Materials, Expert Panel
- 9/00 European Union, Working Group of the Scientific Committee on Foods
- 8/00 California EPA, Office of Environmental Health Hazard Assessment
- 8/00 Oregon State University, Toxicology Program
- 5/00 University of Texas, Austin, Department of Pharmacology & Toxicology
- 9/99 Canadian Health Protection Branch
- 6/99 Chemical Ingredient Review, Cosmetic, Toiletries and Fragrance Association
- 5/99 Allegheny Regional Chapter, Society of Toxicology
- 4/99 Queen's University, Department of Pharmacology and Toxicology
- 1/99 Chemical Industry Institute of Toxicology
- 12/98 Canadian Society of Toxicology, Annual Meeting
- 9/98 Midwest Cytochrome P450 Symposium, Purdue University
- 10/97 International Society for the Study of Xenobiotics, North American Meeting
- 12/96 Barton Creek Cancer Conference
- 7/96 Toxicology Forum, Annual summer meeting
- 3/96 USFDA, Office of Cosmetics and Colors

1/96 University of Kansas Medical Center, Dept. Pharmacology and Toxicology  
11/95 Research Institute for Fragrance Materials, International Exchange  
12/94 University of Minnesota, Dept. Pharmacology and Toxicology  
5/94 Midwest Regional Chapter, Society of Toxicology  
5/94 Robert Scala Award Lectureship, Rutgers University  
11/93 Michigan State University, Dept. Pharmacology and Toxicology  
5/93 Johns Hopkins University, Center for Alternative Animal Testing  
2/93 University of Kansas Medical Center, Dept. Pharmacology and Toxicology  
11/92 USEPA, Cancer Assessment Group  
8/92 American Chemical Society, Annual National meeting  
12/91 International Life Sciences Institute, Cancer Dose Response Workshop  
10/91 Northeast Regional Chapter, Society of Toxicology  
5/91 Ohio Valley Regional Chapter, Society of Toxicology  
3/91 USEPA, Science Advisory Board Meeting  
2/91 USEPA, Health Effects Division  
1/91 USFDA, Office Toxic Substances  
5/90 Michigan Regional Chapter, Society of Toxicology  
7/89 International Chelation Conference  
4/89 Purdue University, Dept. Pharmacology and Toxicology  
11/88 Indiana University, Dept. Pharmacology  
9/88 Drug Metabolism and Safety Subsection, Pharmaceutical Manufacturers  
Association  
6/88 Research Institute for Fragrance Materials, Toxicology Subcommittee  
5/87 Philadelphia College of Pharmacy & Science, Dept. Pharmacology and  
Toxicology



## BIBLIOGRAPHY

### DISSERTATION

Induction, Ontogeny and Regulation of Metallothionein-I and Metallothionein-II in Rats

### BOOK CHAPTERS

Klaassen, C. D., Lehman, L. D., and Maitani, T. (1986). Effect of Dosage and Form of Cadmium on its Absorption and Distribution. In *Trace Substances in Environmental Health-XX* (ed by D. D. Hemphill). University of Missouri Press, pp 113-121.

Lehman-McKeeman, L. D., Kershaw, W. C., and Klaassen, C. D. (1991). Species Differences in Metallothionein Regulation: A Comparison of the Induction of Isometallothioneins in Rats and Mice. In *Metallothionein in Biology and Medicine* (ed by C. D. Klaassen and K. T. Suzuki), CRC Press, Boston, pp121-131.

Lehman-McKeeman, L. D. (1993). Male Rat-Specific Light Hydrocarbon Nephropathy In *Toxicology of the Kidney* (ed by R. S. Goldstein and J. B. Hook) Raven Press, pp 477-494.

Lehman-McKeeman, L. D. (1995). Dose-Response Relationships for Male Rat Specific  $\alpha$ 2u-Globulin Nephropathy and Renal Carcinogenesis. ILSI Risk Science Institute, Monograph of the Cancer Dose Response Working Group. ILSI Press, pp 175-183.

Daston, G. P. and Lehman-McKeeman, L. D. (1996). Constitutive and Induced Metallothionein Expression in Development. In *Toxicology of Metals*, (ed by L. Chang), CRC Press, New York, pp 1139-1151.

Lehman-McKeeman, L. D. (1997).  $\alpha$ 2u-Globulin Nephropathy In *Comprehensive Toxicology, Volume 7 Renal Toxicology* (ed by I.G. Sipes, A. J. Gandolfi and C. McQueen) Elsevier Science, Inc. pp 677-692.

Swenberg, J. A. and Lehman-McKeeman, L. D. (1999).  $\alpha$ 2u-Globulin Associated Nephropathy as a Mechanism of Renal Tubular Cell Carcinogenesis in Male Rats. IARC Monographs 147, 95-118.

Lehman-McKeeman, L. D. (2005). Metabonomics. In *Pharmacogenomics* (ed by W. Kalow, U. A. Meyer and R. F. Tyndale). Taylor and Francis Group, Boca Raton, FL, pp 327-340.

Lehman-McKeeman, L. D. (2007). Absorption, Distribution and Excretion. In *Cassarett and Doull's Toxicology: The Basic Science of Poisons*. Seventh Edition (ed by C. D. Klaassen). McGraw Hill, New York, NY pp 131-159.

Lehman-McKeeman, L. D. (2010).  $\alpha$ 2u-Globulin Nephropathy In *Comprehensive Toxicology, Volume 7 Renal Toxicology* Second Edition, (ed by R.G. Schnellman) Elsevier Science, Inc. Oxford, UK, pp 507-521.

Monicah A. Otieno and Lehman-McKeeman, L.D. (2011). Mechanism-Based Toxicity Studies for Drug Development. In *Predictive Toxicology in Drug Safety* (ed by J. J. Xu and L. Urban). Cambridge University Press, New York, NY, pp 230-243.

Lehman-McKeeman, L.D. and Foster W. R. (2011). Applying Transcriptional Profiling in Drug Safety Evaluation. In: *Applied Toxicogenomic in Safety Evaluation and Risk Assessment*. (ed by B. Gollapudi and D. Boverhof). Wiley and Sons, Inc. pp 331-348.

Wilbur, R., Kreter, B., Bifano, M., Danetz, S., Lehman-McKeeman, L.D., Tenney, D. J., Meanwell, N., Zahler, R., and Brett-Smith, H. (2011). Discovery and Development of Entecavir. In *Antiviral Drugs: From Basic Discovery Through Clinical Trials* (Ed by W. Kazmierski). Wiley and Sons, Inc. pp 410-416.

Lehman-McKeeman, L. D. (2013). Absorption, Distribution and Excretion. In *Cassarett and Doull's Toxicology: The Basic Science of Poisons* Eighth Edition (ed by C. D. Klaassen). McGraw Hill, New York, NY. pp 153-184.

Lehman-McKeeman, L. D. (2013). Biochemical and Molecular Mechanisms of Toxicity. In: Haschek, W. M., Rousseaux, C. G., Wallig, M. A. (Eds), Haschek and Rousseaux's Handbook of Toxicologic Pathology. Elsevier Inc., Academic Press, pp 15-38.

Lehman-McKeeman, L. D. (2016).  $\alpha_2$ -Globulin Nephropathy In *Comprehensive Toxicology*, Volume 7 Renal Toxicology Third Edition, (ed by R.G. Schnellman) Elsevier Science, Inc. Oxford, UK, (in press).

## FULL-LENGTH MANUSCRIPTS

1. Lehman, L. D. and Poisner, A. M. (1984). Induction of metallothionein synthesis in cultured human trophoblasts by cadmium and zinc. *J. Toxicol. Environ. Health* **14**, 419-432.
2. Lehman, L. D. and Klaassen, C. D. (1986). Separation and quantitation of metallothioneins by high-performance liquid chromatography coupled with atomic absorption spectrophotometry. *Anal. Biochem.* **153**, 305-314.
3. Lehman, L. D. and Klaassen, C. D. (1986). Dosage-dependent disposition of cadmium administered orally to rats. *Toxicol. Appl. Pharmacol.* **84**, 159-167.
4. Brzeznicza, E. A., Lehman, L. D., and Klaassen, C. D. (1986). Induction of hepatic metallothionein following administration of urethane. *Toxicol. Appl. Pharmacol.* **87**, 457-463.
5. Lehman-McKeeman, L. D. and Klaassen, C. D. (1987). Induction of metallothionein-I and metallothionein-II in rats by cadmium and zinc. *Toxicol. Appl. Pharmacol.* **88**, 195-202.
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10. Lehman-McKeeman, L. D., Rodriguez, P. A., Takigiku, R., Caudill, D., and Fey, M. (1989). d-Limonene-induced male rat-specific nephrotoxicity: Evaluation of the association between d-limonene and  $\alpha_2$ u-globulin. *Toxicol. Appl. Pharmacol.* **99**, 250-259.
11. Klaassen, C. D. and Lehman-McKeeman, L. D. (1989). Regulation of the Isoforms of Metallothionein. In *Proceedings of the First International Meeting on Molecular Mechanisms of Metal Toxicity and Carcinogenicity*. *Biol. Trace Elem. Res.* **21**, 119-129.
12. Klaassen, C. D. and Lehman-McKeeman, L. D. (1989). Induction of metallothionein. *J. Amer. Coll. Toxicol.* **8**, 1291-1297.

13. Lehman-McKeeman, L. D., Rivera-Torres, M. I., and Caudill, D. (1990). Lysosomal degradation of  $\alpha$ 2u-globulin and  $\alpha$ 2u-globulin-xenobiotic conjugates. *Toxicol. Appl. Pharmacol.* **103**, 539-548.
14. Kershaw, W. C., Lehman-McKeeman, L. D., and Klaassen, C. D. (1990). Hepatic isometallothioneins in mice: Induction in adults and post-natal ontogeny. *Toxicol. Appl. Pharmacol.* **104**, 267-275.
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16. Lehman-McKeeman, L. D., Rodriguez, P. A., Caudill, T. N., Fey, M. L., Eddy, C. L., and Asquith, T. N. (1991). Hyaline droplet nephropathy resulting from exposure to 3,5,5-trimethylhexanoyloxybenzene sulfonate. *Toxicol. Appl. Pharmacol.* **107**, 429-438.
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19. Rodriguez, P. A., Takigiku, R., Lehman-McKeeman, L. D., Fey, M., and Caudill, D. (1991). Design of a gas chromatograph with parallel radioactivity and mass spectrometry detection. Application to the identification of the major metabolite of d-limonene associated with  $\alpha$ 2u-globulin. *J. Chromatogr. Biomed. Appl.* **563**, 271-282.
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  27. Daston, G. P., Overmann, G. J., Baines, D., Taubeneck, M. W., Lehman-McKeeman, L. D., Rogers, J. M., and Keen, C. L. (1994). Altered Zn status by a-hederin in the pregnant rat and its relationship to adverse developmental outcome. Repro. Toxicol. **8**, 15-24.
  28. Lehman-McKeeman, L. D. and Caudill, D. (1994). d-Limonene induced hyaline droplet nephropathy in  $\alpha$ 2u-globulin transgenic mice. Fund. Appl. Toxicol. **23**, 562-568.
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  31. Lehman-McKeeman, L. D., Johnson, D. R., and Caudill, D. (1997). Induction and inhibition of mouse cytochrome P-450 2B enzymes by musk xylene. Toxicol. Appl. Pharmacol. **142**, 169-177.
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  33. Purdon, M. P. and Lehman-McKeeman, L. D. (1997). Improved high performance liquid chromatographic procedure for the separation and quantification of hydroxytestosterone metabolites. J. Pharmacol. Toxicol. Methods. **37**, 67-73.
  34. Lehman-McKeeman, L. D., Stuard, S. B., Caudill, D., and Johnson, D. R. (1997). Amine metabolites of musk xylene induce mouse cytochrome P4502B enzymes: Contribution of microsomal enzyme induction to the hepatocarcinogenicity of musk xylene. Mol. Carcinogenesis **20**, 308-316.
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38. Born, S. L., Caudill, D., Fix, A. S., and Lehman-McKeeman, L. D. (1998). Coumarin is a mouse-specific Clara cell toxicant. *Toxicol. Appl. Pharmacol.* **151**, 45-56.
39. Chaudhuri, B. N., Kleywegt, G. J., Bjorkman, J., Lehman-McKeeman, L. D., Oliver, J. D., and Jones, T. A. (1999). The structures of  $\alpha$ 2u-globulin and its complex with a hyaline droplet inducer. *Acta Cryst. D.* **55**, 753-762.
40. Lehman-McKeeman, L. D. and Caudill, D. (1999). Development of an in vitro assay to predict  $\alpha$ 2u-globulin nephropathy. *In Vitro Mol. Toxicol.* **12**, 83-95.
41. Lehman-McKeeman, L. D. and Gamsky, E. A. (1999) Diethanolamine inhibits choline uptake and phosphatidylcholine synthesis in Chinese Hamster Ovary cells. *Biochem. Biophys. Res. Commun.* **262**, 600-604.
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43. Lehman-McKeeman, L. D., Caudill, D., Vassallo, J. D., Pearce, R. E., Madan, A., and Parkinson, A. (1999). Characterization of the effects of musk xylene and musk ketone on rat hepatic cytochromes P450. *Toxicol. Lett.* **111**, 105-115.
44. Born, S. L., Hu, J. K., and Lehman-McKeeman, L. D. (2000). O-Hydroxyphenyl-acetaldehyde is a hepatotoxic metabolite of coumarin. *Drug Metab. Dispo.* **28**, 218-223.
45. Lehman-McKeeman, L. D. and Gamsky, E. A. (2000). Choline supplementation prevents diethanolamine-induced morphological transformation in Syrian hamster embryo cells: Evidence for a carcinogenic mechanism. *Toxicol. Sci.* **55**, 303-310.
46. Born, S. L., Caudill, D., and Lehman-McKeeman, L. D. (2001). In vitro kinetics of coumarin 3,4-epoxidation: Application to species differences in toxicity and carcinogenicity. *Toxicol. Sci.* **58**, 23-31.
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