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Mathematics Library News 14

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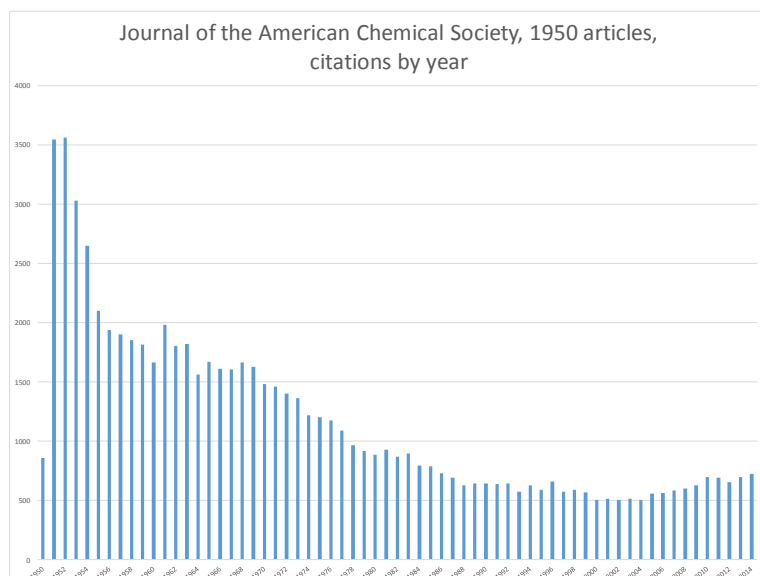
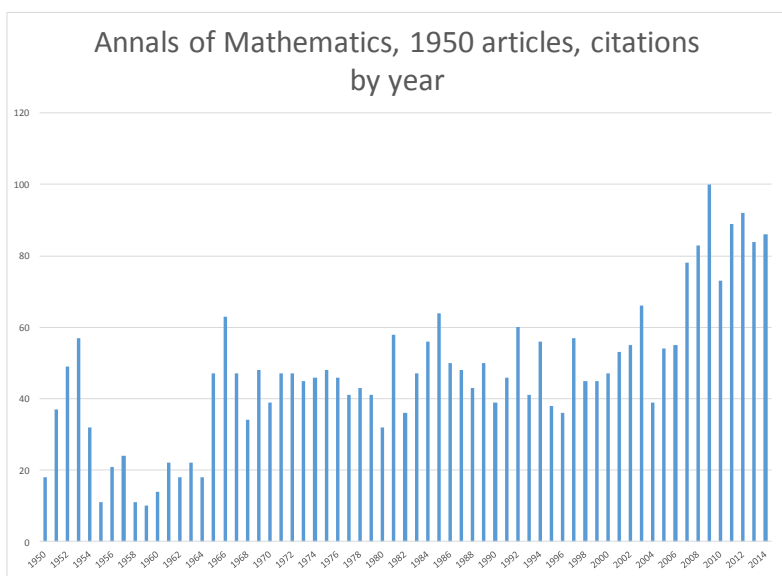
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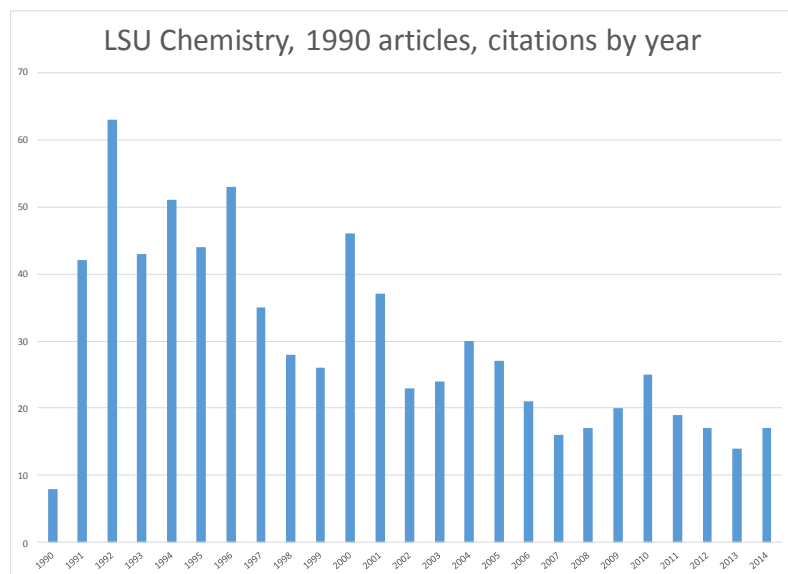
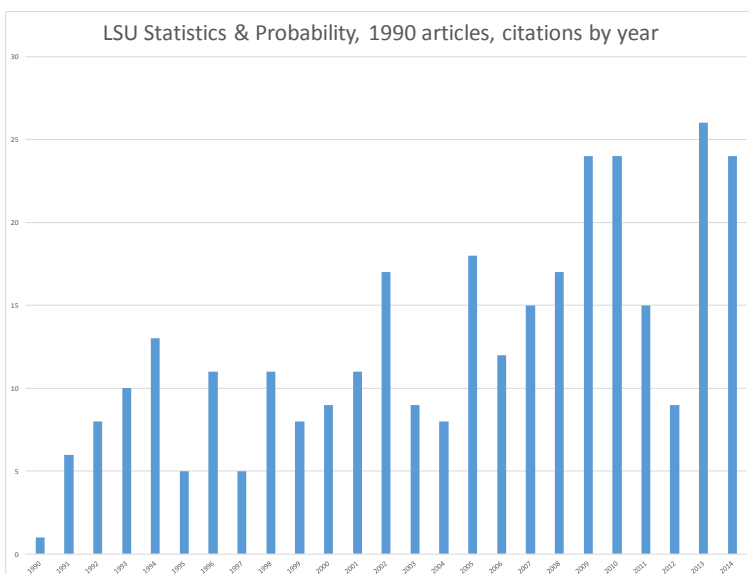
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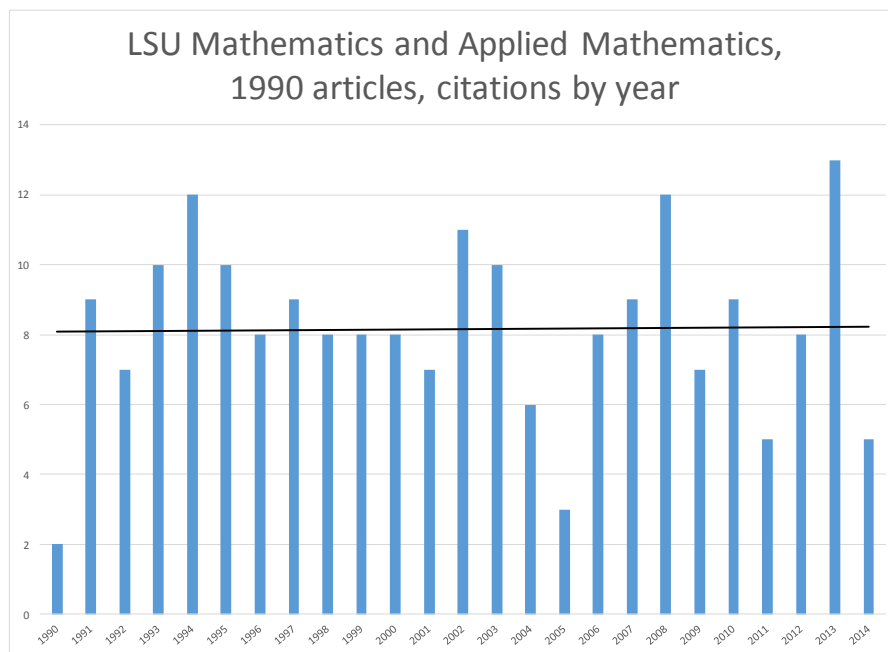
Lately your Mathematics Librarian has been looking at the citation patterns of the aging of scientific literature. There are several ways to look at this. A year ago I sent you some distributions for a single *citing* year. Below are distributions for a single *cited* year. Various studies show an increasing use of older scientific literature throughout science. One especially helpful study is by Larivière et al. in *JASIST* 59(2) (2008), pages 288-296.

For two prestigious journals, one in Mathematics and one in Chemistry, and the same selected year of articles, there are contrasting distributions of citations by year. The pattern for *JACS* of an initially high but subsequently subsiding citation rate also holds, but even more sharply, for journals in Medical and Biological Sciences. The scale is entirely different, with 93 articles published in *Annals of Mathematics* in 1950, versus 2068 articles published in *JACS* in 1950. (Web of Science data)



A similarly contrast of distributions holds for sets of articles published in 1990 with LSU-affiliated authors in selected Web of Science (WoS) subject categories (which classify by journal). For 1990, there are 13 articles with LSU-affiliated authors in category “Statistics & Probability.” The category, “Multidisciplinary Chemistry” has 71 articles in 1990 with LSU-affiliated authors. There were 30 articles with LSU-affiliated authors published in 1990 in either “Mathematics” or “Applied Mathematics.” The latter distribution, with a linear trend shown, is on the next page.





Who is citing LSU Mathematics and Statistics articles?

WoS was searched for all articles with LSU-affiliated authors in the years 1980, 1990, and 2000, then filtered by WoS categories. Articles citing the LSU-affiliated articles were then retrieved.

For LSU Mathematics and Applied Mathematics articles, most citations to these articles are from Mathematics.

For LSU Statistics & Probability (pages 3 and 4 of this newsletter) citations come from 136 of the 251 WoS subject categories. There is just one article with an LSU-affiliated author in Statistics & Probability for 1980: Population Marginal Means in the Linear Model: An Alternative to Least Squares Means, by Searle, Speed, and Milliken, *American Statistician* 34(4): 216-221. Among the authors, F. Michael Speed was a member of the Department of Experimental Statistics. It has 309 citations in from 110 categories in WoS as of 12/2/15.

In the WoS data below, a journal, and hence the articles in it, can be in more than one category.

Citing Categories (WoS) for LSU Mathematics	1980 articles (n=20)	1990 articles (n=30)	2000 articles (n=38)
AUTOMATION CONTROL SYSTEMS	1	1	11
BIOLOGY		1	
BUSINESS FINANCE			1
COMPUTER SCIENCE ARTIFICIAL INTELLIGENCE		1	2
COMPUTER SCIENCE CYBERNETICS			1
COMPUTER SCIENCE INFORMATION SYSTEMS	1	6	3
COMPUTER SCIENCE INTERDISCIPLINARY APPLICATIONS	2		
COMPUTER SCIENCE SOFTWARE ENGINEERING	3	4	4
COMPUTER SCIENCE THEORY METHODS	2	16	12
ECONOMICS	2		2
ENGINEERING BIOMEDICAL			1
ENGINEERING CIVIL			1
ENGINEERING ELECTRICAL ELECTRONIC		3	1
ENGINEERING INDUSTRIAL	2		
EVOLUTIONARY BIOLOGY		1	
GEOSCIENCES MULTIDISCIPLINARY			1
IMAGING SCIENCE PHOTOGRAPHIC TECHNOLOGY		1	
IMMUNOLOGY			1
MANAGEMENT		1	1
MATHEMATICAL COMPUTATIONAL BIOLOGY		1	
MATHEMATICS	113	133	154
MATHEMATICS APPLIED	49	52	72
MATHEMATICS INTERDISCIPLINARY APPLICATIONS	5	1	2
MULTIDISCIPLINARY SCIENCES	2	2	
OPERATIONS RESEARCH MANAGEMENT SCIENCE	3	2	3
PHYSICS MATHEMATICAL	1	18	5
PHYSICS MULTIDISCIPLINARY	1	1	1
PHYSICS PARTICLES FIELDS			1
SOCIAL SCIENCES MATHEMATICAL METHODS	2		2
STATISTICS PROBABILITY	1	25	8
WATER RESOURCES			1

Citing Categories (WoS) for LSU Statistics & Probability	1980 article (n=1)	1990 articles (n=13)	2000 articles (n=9)
ACOUSTICS	1		
AGRICULTURE DAIRY ANIMAL SCIENCE	15		
AGRICULTURE MULTIDISCIPLINARY	3		
AGRONOMY	6		
ALLERGY	3		
ANDROLOGY	1		
ANTHROPOLOGY	1		
AUTOMATION CONTROL SYSTEMS		1	1
BEHAVIORAL SCIENCES	7		
BIOCHEMICAL RESEARCH METHODS	1		
BIOCHEMISTRY MOLECULAR BIOLOGY	3		
BIODIVERSITY CONSERVATION	5		2
BIOLOGY	6	2	2
BIOTECHNOLOGY APPLIED MICROBIOLOGY	4		
BUSINESS	4	6	
BUSINESS FINANCE	6	55	
CARDIAC CARDIOVASCULAR SYSTEMS	6		
CELL BIOLOGY	1		
CELL TISSUE ENGINEERING	1		
CHEMISTRY APPLIED	1		
CLINICAL NEUROLOGY	11		
COMMUNICATION	1	6	
COMPUTER SCIENCE ARTIFICIAL INTELLIGENCE		1	2
COMPUTER SCIENCE INFORMATION SYSTEMS		2	2
COMPUTER SCIENCE INTERDISCIPLINARY APPLICATIONS	2	13	7
COMPUTER SCIENCE SOFTWARE ENGINEERING	2	1	
COMPUTER SCIENCE THEORY METHODS		1	5
CRITICAL CARE MEDICINE	2		
DENTISTRY ORAL SURGERY MEDICINE	3		
ECOLOGY	31		3
ECONOMICS		163	
EDUCATION EDUCATIONAL RESEARCH	4		1
EDUCATION SCIENTIFIC DISCIPLINES	1		
EDUCATION SPECIAL	2		
ENDOCRINOLOGY METABOLISM	9		
ENERGY FUELS		7	
ENGINEERING BIOMEDICAL	1		1
ENGINEERING CHEMICAL	1		

Citing Categories (WoS) for LSU Statistics & Probability	1980 article (n=1)	1990 articles (n=13)	2000 articles (n=9)
ENGINEERING CIVIL	1		
ENGINEERING ELECTRICAL ELECTRONIC	1		
ENGINEERING ENVIRONMENTAL	1		1
ENGINEERING INDUSTRIAL		3	2
ENGINEERING MECHANICAL		1	
ENGINEERING MULTIDISCIPLINARY		1	
ENTOMOLOGY	5		5
ENVIRONMENTAL SCIENCES	13	3	4
ENVIRONMENTAL STUDIES		9	
ETHICS	1		
FISHERIES	16	2	1
FOOD SCIENCE TECHNOLOGY	8		
FORESTRY	6	2	
GENETICS HEREDITY	4		
GEOSCIENCES MULTIDISCIPLINARY	1		
GERIATRICS GERONTOLOGY	3		
GERONTOLOGY	2		
HEALTH CARE SCIENCES SERVICES	10		
HEALTH POLICY SERVICES	2		
HEMATOLOGY	2		
HORTICULTURE	2		
HOSPITALITY LEISURE SPORT TOURISM		2	
IMMUNOLOGY	9		1
INFECTIOUS DISEASES	5		
INFORMATION SCIENCE LIBRARY SCIENCE		1	
INTERNATIONAL RELATIONS		4	
LAW		1	
LIMNOLOGY	2		1
LINGUISTICS	1		
MANAGEMENT	2	11	1
MARINE FRESHWATER BIOLOGY	10	1	2
MATERIALS SCIENCE PAPER WOOD	3	1	
MATERIALS SCIENCE TEXTILES	2		
MATHEMATICAL COMPUTATIONAL BIOLOGY	2	3	2
MATHEMATICS		2	4
MATHEMATICS APPLIED		1	10
MATHEMATICS INTERDISCIPLINARY APPLICATIONS		33	
MECHANICS		1	
MEDICAL INFORMATICS			1

Citing Categories (WoS) for LSU Statistics & Probability	1980 article (n=1)	1990 articles (n=13)	2000 articles (n=9)
MEDICINE GENERAL INTERNAL	16		
MEDICINE LEGAL	2	1	3
MEDICINE RESEARCH EXPERIMENTAL	3		1
METEOROLOGY ATMOSPHERIC SCIENCES	3		
MICROBIOLOGY	6		
MULTIDISCIPLINARY SCIENCES	2	1	
NEUROIMAGING	1		
NEUROSCIENCES	11		
NUCLEAR SCIENCE TECHNOLOGY	1		
NURSING	4		
NUTRITION DIETETICS	9		
OBSTETRICS GYNECOLOGY	8		
OCEANOGRAPHY	4		
ONCOLOGY	6	2	
OPERATIONS RESEARCH MANAGEMENT SCIENCE		10	6
OPHTHALMOLOGY	1		
ORTHOPEDICS	2		
OTORHINOLARYNGOLOGY	1		
PEDIATRICS	4		
PERIPHERAL VASCULAR DISEASE	5		
PHARMACOLOGY PHARMACY	13	1	
PHYSICS MULTIDISCIPLINARY		7	
PHYSIOLOGY	2		
PLANNING DEVELOPMENT		1	
PLANT SCIENCES	8		
POLITICAL SCIENCE		9	
PSYCHIATRY	7		
PSYCHOLOGY	5		
PSYCHOLOGY APPLIED	2	1	
PSYCHOLOGY CLINICAL	6		
PSYCHOLOGY DEVELOPMENTAL	3		
PSYCHOLOGY EDUCATIONAL	3		
PSYCHOLOGY EXPERIMENTAL	2		
PSYCHOLOGY MATHEMATICAL		2	
PSYCHOLOGY MULTIDISCIPLINARY	3		
PSYCHOLOGY SOCIAL	2		
PUBLIC ENVIRONMENTAL OCCUPATIONAL HEALTH	18	1	2
RADIOLOGY NUCLEAR MEDICINE MEDICAL IMAGING	2		

Citing Categories (WoS) for LSU Statistics & Probability	1980 article (n=1)	1990 articles (n=13)	2000 articles (n=9)
REHABILITATION	6		
REPRODUCTIVE BIOLOGY	7		
RESPIRATORY SYSTEM	4		
RHEUMATOLOGY	1		
SOCIAL SCIENCES INTERDISCIPLINARY	1	2	
SOCIAL SCIENCES MATHEMATICAL METHODS	1	65	
SOCIAL WORK	1		
SOCIOLOGY	2	4	
SOIL SCIENCE	4		
SPORT SCIENCES	1		
STATISTICS PROBABILITY	11	82	14
SUBSTANCE ABUSE	2		
SURGERY	2		
THERMODYNAMICS		2	
TOXICOLOGY	12		
URBAN STUDIES		3	
UROLOGY NEPHROLOGY	2		
VETERINARY SCIENCES	5		3
WATER RESOURCES	1		1
WOMEN S STUDIES	1		
ZOOLOGY	8		