Frederick A Heberle

List of Publications by Year
in descending order

133 papers	9,119 citations	28242 55 h-index	45285 90 g-index
136 all docs	136 docs citations	136 times ranked	6663 citing authors

#	Article	IF	Citations
1	Fluid phase lipid areas and bilayer thicknesses of commonly used phosphatidylcholines as a function of temperature. Biochimica Et Biophysica Acta - Biomembranes, 2011, 1808, 2761-2771.	1.4	850
2	Lipid Bilayer Structure Determined by the Simultaneous Analysis of Neutron and X-Ray Scattering Data. Biophysical Journal, 2008, 95, 2356-2367.	0.2	518
3	Lipid Rafts: Controversies Resolved, Mysteries Remain. Trends in Cell Biology, 2020, 30, 341-353.	3.6	373
4	Bilayer Thickness Mismatch Controls Domain Size in Model Membranes. Journal of the American Chemical Society, 2013, 135, 6853-6859.	6.6	267
5	How cholesterol stiffens unsaturated lipid membranes. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 21896-21905.	3.3	212
6	Phase studies of model biomembranes: Complex behavior of DSPC/DOPC/Cholesterol. Biochimica Et Biophysica Acta - Biomembranes, 2007, 1768, 2764-2776.	1.4	208
7	Cholesterol Shows Preference for the Interior of Polyunsaturated Lipid Membranes. Journal of the American Chemical Society, 2008, 130, 10-11.	6.6	204
8	Phase Separation in Lipid Membranes. Cold Spring Harbor Perspectives in Biology, 2011, 3, a004630-a004630.	2.3	195
9	Comparison of Three Ternary Lipid Bilayer Mixtures: FRET and ESR Reveal Nanodomains. Biophysical Journal, 2010, 99, 3309-3318.	0.2	190
10	Molecular structures of fluid phase phosphatidylglycerol bilayers as determined by small angle neutron and X-ray scattering. Biochimica Et Biophysica Acta - Biomembranes, 2012, 1818, 2135-2148.	1.4	189
11	The Effect of Cholesterol on Short- and Long-Chain Monounsaturated Lipid Bilayers as Determined by Molecular Dynamics Simulations and X-Ray Scattering. Biophysical Journal, 2008, 95, 2792-2805.	0.2	148
12	Structure and Interactions in the Anomalous Swelling Regime of Phospholipid Bilayersâ€. Langmuir, 2003, 19, 1716-1722.	1.6	142
13	Method for obtaining structure and interactions from oriented lipid bilayers. Physical Review E, 2000, 63, 011907.	0.8	141
14	Cholesterol Hydroxyl Group Is Found To Reside in the Center of a Polyunsaturated Lipid Membrane. Biochemistry, 2006, 45, 1227-1233.	1.2	135
15	Location of Cholesterol in DMPC Membranes. A Comparative Study by Neutron Diffraction and Molecular Mechanics Simulationâ€. Langmuir, 2001, 17, 2019-2030.	1.6	129
16	SANS Study of the Structural Phases of Magnetically Alignable Lanthanide-Doped Phospholipid Mixtures. Langmuir, 2001, 17, 2629-2638.	1.6	128
17	Preparation of asymmetric phospholipid vesicles for use as cell membrane models. Nature Protocols, 2018, 13, 2086-2101.	5.5	128
18	Curvature Effect on the Structure of Phospholipid Bilayers. Langmuir, 2007, 23, 1292-1299.	1.6	124

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19	The in vivo structure of biological membranes and evidence for lipid domains. PLoS Biology, 2017, 15, e2002214.	2.6	123
20	Tocopherol Activity Correlates with Its Location in a Membrane: A New Perspective on the Antioxidant Vitamin E. Journal of the American Chemical Society, 2013, 135, 7523-7533.	6.6	114
21	Cholesterol Is Found To Reside in the Center of a Polyunsaturated Lipid Membrane. Biochemistry, 2008, 47, 7090-7096.	1.2	113
22	Phase behavior and domain size in sphingomyelin-containing lipid bilayers. Biochimica Et Biophysica Acta - Biomembranes, 2013, 1828, 1302-1313.	1.4	112
23	Cholesterol in Bilayers with PUFA Chains: Doping with DMPC or POPC Results in Sterol Reorientation and Membrane-Domain Formation. Biochemistry, 2010, 49, 7485-7493.	1.2	109
24	Mechanical Properties of Nanoscopic Lipid Domains. Journal of the American Chemical Society, 2015, 137, 15772-15780.	6.6	108
25	Subnanometer Structure of an Asymmetric Model Membrane: Interleaflet Coupling Influences Domain Properties. Langmuir, 2016, 32, 5195-5200.	1.6	105
26	Liquid-Liquid Domains in Bilayers Detected by Wide Angle X-Ray Scattering. Biophysical Journal, 2008, 95, 682-690.	0.2	104
27	Control of a Nanoscopic-to-Macroscopic Transition: Modulated Phases in Four-Component DSPC/DOPC/POPC/Chol Giant Unilamellar Vesicles. Biophysical Journal, 2011, 101, L8-L10.	0.2	103
28	Adsorbed to a Rigid Substrate, Dimyristoylphosphatidylcholine Multibilayers Attain Full Hydration in All Mesophases. Biophysical Journal, 1998, 75, 2157-2162.	0.2	100
29	The Observation of Highly Ordered Domains in Membranes with Cholesterol. PLoS ONE, 2013, 8, e66162.	1.1	100
30	¹H NMR Shows Slow Phospholipid Flip-Flop in Gel and Fluid Bilayers. Langmuir, 2017, 33, 3731-3741.	1.6	100
31	Comparing Membrane Simulations to Scattering Experiments: Introducing the SIMtoEXP Software. Journal of Membrane Biology, 2010, 235, 43-50.	1.0	97
32	Phase diagram of a 4-component lipid mixture: DSPC/DOPC/POPC/chol. Biochimica Et Biophysica Acta - Biomembranes, 2013, 1828, 2204-2214.	1.4	97
33	Areas of Monounsaturated Diacylphosphatidylcholines. Biophysical Journal, 2009, 97, 1926-1932.	0.2	94
34	Bilayer thickness and thermal response of dimyristoylphosphatidylcholine unilamellar vesicles containing cholesterol, ergosterol and lanosterol: A small-angle neutron scattering study. Biochimica Et Biophysica Acta - Biomembranes, 2005, 1720, 84-91.	1.4	92
35	Scattering Density Profile Model of POPG Bilayers As Determined by Molecular Dynamics Simulations and Small-Angle Neutron and X-ray Scattering Experiments. Journal of Physical Chemistry B, 2012, 116, 232-239.	1.2	92
36	The molecular structure of a phosphatidylserine bilayer determined by scattering and molecular dynamics simulations. Soft Matter, 2014, 10, 3716.	1.2	84

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37	Cholesterol's location in lipid bilayers. Chemistry and Physics of Lipids, 2016, 199, 17-25.	1.5	83
38	Molecular Structures of Fluid Phosphatidylethanolamine Bilayers Obtained from Simulation-to-Experiment Comparisons and Experimental Scattering Density Profiles. Journal of Physical Chemistry B, 2015, 119, 1947-1956.	1.2	81
39	Direct label-free imaging of nanodomains in biomimetic and biological membranes by cryogenic electron microscopy. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 19943-19952.	3.3	81
40	Line Tension Controls Liquid-DisorderedÂ+ Liquid-Ordered Domain Size Transition in Lipid Bilayers. Biophysical Journal, 2017, 112, 1431-1443.	0.2	78
41	Hybrid and Nonhybrid Lipids Exert Common Effects on Membrane Raft Size and Morphology. Journal of the American Chemical Society, 2013, 135, 14932-14935.	6.6	73
42	On the Mechanism of Bilayer Separation by Extrusion, or Why Your LUVs Are Not Really Unilamellar. Biophysical Journal, 2019, 117, 1381-1386.	0.2	72
43	Entropy-Driven Softening of Fluid Lipid Bilayers by Alamethicin. Langmuir, 2007, 23, 11705-11711.	1.6	70
44	Structural Significance of Lipid Diversity as Studied by Small Angle Neutron and X-ray Scattering. Membranes, 2015, 5, 454-472.	1.4	70
45	Intrinsic Curvature-Mediated Transbilayer Coupling in Asymmetric Lipid Vesicles. Biophysical Journal, 2018, 114, 146-157.	0.2	70
46	Description of Hydration Water in Protein (Green Fluorescent Protein) Solution. Journal of the American Chemical Society, 2017, 139, 1098-1105.	6.6	68
47	Model-based approaches for the determination of lipid bilayer structure from small-angle neutron and X-ray scattering data. European Biophysics Journal, 2012, 41, 875-890.	1.2	66
48	Structural and mechanical properties of cardiolipin lipid bilayers determined using neutron spin echo, small angle neutron and X-ray scattering, and molecular dynamics simulations. Soft Matter, 2015, 11, 130-138.	1.2	65
49	Docosahexaenoic acid regulates the formation of lipid rafts: A unified view from experiment and simulation. Biochimica Et Biophysica Acta - Biomembranes, 2018, 1860, 1985-1993.	1.4	65
50	On scattered waves and lipid domains: detecting membrane rafts with X-rays and neutrons. Soft Matter, 2015, 11, 9055-9072.	1.2	63
51	Global small-angle X-ray scattering data analysis for multilamellar vesicles: the evolution of the scattering density profile model. Journal of Applied Crystallography, 2014, 47, 173-180.	1.9	62
52	Lipid bilayer thickness determines cholesterol's location in model membranes. Soft Matter, 2016, 12, 9417-9428.	1.2	61
53	Method of separated form factors for polydisperse vesicles. Journal of Applied Crystallography, 2006, 39, 293-303.	1.9	59
54	Fluorescence methods to detect phase boundaries in lipid bilayer mixtures. Biochimica Et Biophysica Acta - Molecular Cell Research, 2005, 1746, 186-192.	1.9	57

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55	Interactions of the Anticancer Drug Tamoxifen with Lipid Membranes. Biophysical Journal, 2015, 108, 2492-2501.	0.2	55
56	The Functional Significance of Lipid Diversity: Orientation of Cholesterol in Bilayers Is Determined by Lipid Species. Journal of the American Chemical Society, 2009, 131, 16358-16359.	6.6	51
57	Effect of cholesterol on the lateral nanoscale dynamics of fluid membranes. European Biophysics Journal, 2012, 41, 901-913.	1.2	51
58	Joint small-angle X-ray and neutron scattering data analysis of asymmetric lipid vesicles. Journal of Applied Crystallography, 2017, 50, 419-429.	1.9	48
59	What determines the thickness of a biological membrane. General Physiology and Biophysics, 2009, 28, 117-125.	0.4	47
60	Neutron scattering in the biological sciences: progress and prospects. Acta Crystallographica Section D: Structural Biology, 2018, 74, 1129-1168.	1.1	47
61	Nanosecond lipid dynamics in membranes containing cholesterol. Soft Matter, 2014, 10, 2600.	1.2	46
62	Revisiting the bilayer structures of fluid phase phosphatidylglycerol lipids: Accounting for exchangeable hydrogens. Biochimica Et Biophysica Acta - Biomembranes, 2014, 1838, 2966-2969.	1.4	46
63	Gramicidin Increases Lipid Flip-Flop in Symmetric and Asymmetric Lipid Vesicles. Biophysical Journal, 2019, 116, 860-873.	0.2	44
64	<i>Bacillus subtilis</i> Lipid Extract, A Branched-Chain Fatty Acid Model Membrane. Journal of Physical Chemistry Letters, 2017, 8, 4214-4217.	2.1	42
65	The study of liposomes, lamellae and membranes using neutrons and X-rays. Current Opinion in Colloid and Interface Science, 2007, 12, 17-22.	3.4	41
66	Formation of Kinetically Trapped Nanoscopic Unilamellar Vesicles from Metastable Nanodiscs. Langmuir, 2011, 27, 14308-14316.	1.6	41
67	Peptide-Induced Lipid Flip-Flop in Asymmetric Liposomes Measured by Small Angle Neutron Scattering. Langmuir, 2019, 35, 11735-11744.	1.6	41
68	Lipid Rafts: Buffers of Cell Membrane Physical Properties. Journal of Physical Chemistry B, 2019, 123, 2050-2056.	1.2	40
69	Cholesterol Promotes Protein Binding by Affecting Membrane Electrostatics and Solvation Properties. Biophysical Journal, 2017, 113, 2004-2015.	0.2	38
70	FRET Detects the Size of Nanodomains for Coexisting Liquid-Disordered and Liquid-Ordered Phases. Biophysical Journal, 2018, 114, 1921-1935.	0.2	37
71	Interactions between Ether Phospholipids and Cholesterol As Determined by Scattering and Molecular Dynamics Simulations. Journal of Physical Chemistry B, 2012, 116, 14829-14838.	1.2	36
72	Î±-Tocopherol Is Well Designed to Protect Polyunsaturated Phospholipids: MD Simulations. Biophysical Journal, 2015, 109, 1608-1618.	0.2	36

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73	Calcium and Zinc Differentially Affect the Structure of Lipid Membranes. Langmuir, 2017, 33, 3134-3141.	1.6	34
74	Using small-angle neutron scattering to detect nanoscopic lipid domains. Chemistry and Physics of Lipids, 2013, 170-171, 19-32.	1.5	32
75	Phosphatidylserine Asymmetry Promotes the Membrane Insertion of a Transmembrane Helix. Biophysical Journal, 2019, 116, 1495-1506.	0.2	31
76	<i>Î±-</i>Tocopherolâ€™s Location in Membranes Is Not Affected by Their Composition. Langmuir, 2015, 31, 4464-4472.	1.6	30
77	Small unilamellar vesicles: a platform technology for molecular imaging of brain tumors. Nanotechnology, 2011, 22, 195102.	1.3	28
78	Growth kinetics of lipid-based nanodiscs to unilamellar vesiclesâ€"A time-resolved small angle neutron scattering (SANS) study. Biochimica Et Biophysica Acta - Biomembranes, 2013, 1828, 1025-1035.	1.4	28
79	Transverse lipid organization dictates bending fluctuations in model plasma membranes. Nanoscale, 2020, 12, 1438-1447.	2.8	28
80	Effects of Nanoparticle Morphology and Acyl Chain Length on Spontaneous Lipid Transfer Rates. Langmuir, 2015, 31, 12920-12928.	1.6	27
81	Capacitive Detection of Low-Enthalpy, Higher-Order Phase Transitions in Synthetic and Natural Composition Lipid Membranes. Langmuir, 2017, 33, 10016-10026.	1.6	27
82	Small-Angle Neutron Scattering to Detect Rafts and Lipid Domains. Methods in Molecular Biology, 2007, 398, 231-244.	0.4	27
83	Water and Lipid Bilayers. Sub-Cellular Biochemistry, 2015, 71, 45-67.	1.0	26
84	Molecular Picture of the Transient Nature of Lipid Rafts. Langmuir, 2020, 36, 4887-4896.	1.6	26
85	Scattering from laterally heterogeneous vesicles. II. The form factor. Journal of Applied Crystallography, 2007, 40, 513-525.	1.9	25
86	Neutron and X-ray scattering for biophysics and biotechnology: examples of self-assembled lipid systems. Soft Matter, 2009, 5, 2694.	1.2	25
87	Deciphering Melatonin-Stabilized Phase Separation in Phospholipid Bilayers. Langmuir, 2019, 35, 12236-12245.	1.6	25
88	Molecular Structure of Sphingomyelin in Fluid Phase Bilayers Determined by the Joint Analysis of Small-Angle Neutron and X-ray Scattering Data. Journal of Physical Chemistry B, 2020, 124, 5186-5200.	1.2	24
89	Model Membrane Systems Used to Study Plasma Membrane Lipid Asymmetry. Symmetry, 2021, 13, 1356.	1.1	23
90	Scattering from laterally heterogeneous vesicles. I. Model-independent analysis. Journal of Applied Crystallography, 2006, 39, 791-796.	1.9	21

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91	The structures of polyunsaturated lipid bilayers by joint refinement of neutron and X-ray scattering data. Chemistry and Physics of Lipids, 2020, 229, 104892.	1.5	21
92	The influence of curvature on membrane domains. European Biophysics Journal, 2008, 37, 665-671.	1.2	20
93	The antioxidant vitamin E as a membrane raft modulator: Tocopherols do not abolish lipid domains. Biochimica Et Biophysica Acta - Biomembranes, 2020, 1862, 183189.	1.4	20
94	Behavior of Bilayer Leaflets in Asymmetric Model Membranes: Atomistic Simulation Studies. Journal of Physical Chemistry B, 2016, 120, 8438-8448.	1.2	19
95	Reply to Nagle et al.: The universal stiffening effects of cholesterol on lipid membranes. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	18
96	Small-Angle Scattering from Homogenous and Heterogeneous Lipid Bilayers. Behavior Research Methods, 2010, , 201-235.	2.3	17
97	A Computational Approach for Modeling Neutron Scattering Data from Lipid Bilayers. Journal of Chemical Theory and Computation, 2017, 13, 916-925.	2.3	17
98	Limited Perturbation of a DPPC Bilayer by Fluorescent Lipid Probes: A Molecular Dynamics Study. Journal of Physical Chemistry B, 2013, 117, 4844-4852.	1.2	16
99	Lipid-based nanodiscs as models for studying mesoscale coalescence â€" a transport limited case. Soft Matter, 2014, 10, 5055.	1.2	16
100	Complex biomembrane mimetics on the sub-nanometer scale. Biophysical Reviews, 2017, 9, 353-373.	1.5	16
101	Lateral heterogeneity and domain formation in cellular membranes. Chemistry and Physics of Lipids, 2020, 232, 104976.	1.5	16
102	Scattering from phase-separated vesicles. I. An analytical form factor for multiple static domains. Journal of Applied Crystallography, 2015, 48, 1391-1404.	1.9	14
103	Biomembrane Structure and Material Properties Studied With Neutron Scattering. Frontiers in Chemistry, 2021, 9, 642851.	1.8	14
104	Investigation of the domain line tension in asymmetric vesicles prepared via hemifusion. Biochimica Et Biophysica Acta - Biomembranes, 2021, 1863, 183586.	1.4	14
105	Impact of purification conditions and history on A2A adenosine receptor activity: The role of CHAPS and lipids. Protein Expression and Purification, 2016, 124, 62-67.	0.6	13
106	Morphology-Induced Defects Enhance Lipid Transfer Rates. Langmuir, 2016, 32, 9757-9764.	1.6	11
107	Models for randomly distributed nanoscopic domains on spherical vesicles. Physical Review E, 2018, 97, 062405.	0.8	10
108	Time-of-flight Bragg scattering from aligned stacks of lipid bilayers using the Liquids Reflectometer at the Spallation Neutron Source. Journal of Applied Crystallography, 2012, 45, 1219-1227.	1.9	9

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109	Neutron diffraction from aligned stacks of lipid bilayers using the WAND instrument. Journal of Applied Crystallography, 2018, 51, 235-241.	1.9	9
110	Phonon-mediated lipid raft formation in biological membranes. Chemistry and Physics of Lipids, 2020, 232, 104979.	1.5	9
111	Solvent-induced membrane stress in biofuel production: molecular insights from small-angle scattering and all-atom molecular dynamics simulations. Green Chemistry, 2020, 22, 8278-8288.	4.6	9
112	Structure and Interdigitation of Chain-Asymmetric Phosphatidylcholines and Milk Sphingomyelin in the Fluid Phase. Symmetry, 2021, 13, 1441.	1.1	9
113	Interdigitation-Induced Order and Disorder in Asymmetric Membranes. Journal of Membrane Biology, 2022, 255, 407-421.	1.0	9
114	Impact of Fatty-Acid Labeling of Bacillus subtilis Membranes on the Cellular Lipidome and Proteome. Frontiers in Microbiology, 2020, 11, 914.	1.5	8
115	Domains on a Sphere: Neutron Scattering, Models, and Mathematical Formalism. Chemistry and Physics of Lipids, 2019, 222, 47-50.	1.5	7
116	Formation mechanism of self-assembled unilamellar vesiclesSpecial issue on Neutron Scattering in Canada. Canadian Journal of Physics, 2010, 88, 735-740.	0.4	6
117	Biomembranes research using thermal and cold neutrons. Chemistry and Physics of Lipids, 2015, 192, 41-50.	1.5	6
118	Vesicle Viewer: Online visualization and analysis ofÂsmall-angle scattering from lipid vesicles. Biophysical Journal, 2021, 120, 4639-4648.	0.2	6
119	Influence of ceramide on lipid domain stability studied with small-angle neutron scattering: The role of acyl chain length and unsaturation. Chemistry and Physics of Lipids, 2022, 245, 105205.	1.5	6
120	Fractal boundaries underpin the 2D melting of biomimetic rafts. Biochimica Et Biophysica Acta - Biomembranes, 2020, 1862, 183249.	1.4	5
121	Dataset of asymmetric giant unilamellar vesicles prepared via hemifusion: Observation of anti-alignment of domains and modulated phases in asymmetric bilayers.. Data in Brief, 2021, 35, 106927.	0.5	5
122	With Lipid Rafts, Context Is Everything. Biophysical Journal, 2019, 117, 1549-1551.	0.2	4
123	Laterally Resolved Small-Angle Scattering Intensity from Lipid Bilayer Simulations: An Exact and a Limited-Range Treatment. Journal of Chemical Theory and Computation, 2020, 16, 5287-5300.	2.3	4
124	Identifying Membrane Lateral Organization by Contrast-Matched Small Angle Neutron Scattering. Methods in Molecular Biology, 2022, 2402, 163-177.	0.4	4
125	Double membrane formation in heterogeneous vesicles. Soft Matter, 2020, 16, 8806-8817.	1.2	3
126	Changes Experienced by Low-Concentration Lipid Bicelles as a Function of Temperature. Langmuir, 2022, , .	1.6	3

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127	Lipid Rafts in Bacteria: Structure and Function. , 2019, , 1-30.		2
128	Geometryâ€Dependent Nonequilibrium Steadyâ€State Diffusion and Adsorption of Lipid Vesicles in Micropillar Arrays. Advanced Materials Interfaces, 2019, 6, 1900054.	1.9	2
129	FRET from phase-separated vesicles: An analytical solution for a spherical geometry. Chemistry and Physics of Lipids, 2020, 233, 104982.	1.5	2
130	A calorimetric, volumetric and combined SANS and SAXS study of hybrid siloxane phosphocholine bilayers. Chemistry and Physics of Lipids, 2021, 241, 105149.	1.5	2
131	Additively Manufactured NdFeB Polyphenylene Sulfide Halbach Magnets to Generate Variable Magnetic Fields for Neutron Reflectometry. 3D Printing and Additive Manufacturing, 0, , .	1.4	1
132	Sensing a little friction. Biophysical Journal, 2022, , .	0.2	1
133	Lipid Rafts in Bacteria: Structure and Function. , 2020, , 3-32.		0