Keith Moffat

List of Publications by Citations

94 papers	8,752 citations	47 h-index	93 g-index
99 ext. papers	9,468 ext. citations	8.7 avg, IF	6.05 L-index

#	Paper	IF	Citations
94	Structure of a protein photocycle intermediate by millisecond time-resolved crystallography. *Science*, **1997**, 275, 1471-5	33.3	394
93	Structure and signaling mechanism of Per-ARNT-Sim domains. *Structure*, **2009**, 17, 1282-94	5.2	364
92	Structure and function of plant photoreceptors. *Annual Review of Plant Biology*, **2010**, 61, 21-47	30.7	357
91	The LOV domain family: photoresponsive signaling modules coupled to diverse output domains. *Biochemistry*, **2003**, 42, 2-10	3.2	352
90	Time-resolved serial crystallography captures high-resolution intermediates of photoactive yellow protein. *Science*, **2014**, 346, 1242-6	33.3	338
89	Photoexcited structure of a plant photoreceptor domain reveals a light-driven molecular switch. *Plant Cell*, **2002**, 14, 1067-75	11.6	328
88	Protein conformational relaxation and ligand migration in myoglobin: a nanosecond to millisecond molecular movie from time-resolved Laue X-ray diffraction. *Biochemistry*, **2001**, 40, 13802-15	3.2	296
87	Femtosecond structural dynamics drives the trans/cis isomerization in photoactive yellow protein. *Science*, **2016**, 352, 725-9	33.3	276
86	Design and signaling mechanism of light-regulated histidine kinases. *Journal of Molecular Biology*, **2009**, 385, 1433-44	6.5	275
85	Energy transduction on the nanosecond time scale: early structural events in a xanthopsin photocycle. *Science*, **1998**, 279, 1946-50	33.3	265
84	Crystal structure of Pseudomonas aeruginosa bacteriophytochrome: photoconversion and signal transduction. *Proceedings of the National Academy of Sciences of the United States of America*, **2008**, 105, 14715-20	11.5	256
83	N- and C-terminal flanking regions modulate light-induced signal transduction in the LOV2 domain of the blue light sensor phototropin 1 from Avena sativa. *Biochemistry*, **2007**, 46, 14001-9	3.2	233
82	Visualizing reaction pathways in photoactive yellow protein from nanoseconds to seconds. *Proceedings of the National Academy of Sciences of the United States of America*, **2005**, 102, 7145-50	11.5	233
81	Light-activated DNA binding in a designed allosteric protein. *Proceedings of the National Academy of Sciences of the United States of America*, **2008**, 105, 10709-14	11.5	231
80	Primary reactions of the LOV2 domain of phototropin, a plant blue-light photoreceptor. *Biochemistry*, **2003**, 42, 3385-92	3.2	200
79	Structure of a novel photoreceptor, the BLUF domain of AppA from Rhodobacter sphaeroides. *Biochemistry*, **2005**, 44, 7998-8005	3.2	196
78	Structural basis for light-dependent signaling in the dimeric LOV domain of the photosensor YtvA. *Journal of Molecular Biology*, **2007**, 373, 112-26	6.5	191

77	Engineered photoreceptors as novel optogenetic tools. *Photochemical and Photobiological Sciences*, **2010**, 9, 1286-300	4.2	166
76	From dusk till dawn: one-plasmid systems for light-regulated gene expression. *Journal of Molecular Biology*, **2012**, 416, 534-42	6.5	155
75	A molecular movie at 1.8 A resolution displays the photocycle of photoactive yellow protein, a eubacterial blue-light receptor, from nanoseconds to seconds. *Biochemistry*, **2001**, 40, 13788-801	3.2	155
74	Time-resolved biochemical crystallography: a mechanistic perspective. *Chemical Reviews*, **2001**, 101, 1569-81	8.1	154
73	Crystal structure of the chromophore binding domain of an unusual bacteriophytochrome, RpBphP3, reveals residues that modulate photoconversion. *Proceedings of the National Academy of Sciences of the United States of America*, **2007**, 104, 12571-6	11.5	153
72	Volume-conserving trans-cis isomerization pathways in photoactive yellow protein visualized by picosecond X-ray crystallography. *Nature Chemistry*, **2013**, 5, 212-20	17.6	138
71	Temperature-scan cryocrystallography reveals reaction intermediates in bacteriophytochrome. *Nature*, **2011**, 479, 428-32	50.4	130
70	Crystal structures of the Synechocystis photoreceptor Slr1694 reveal distinct structural states related to signaling. *Biochemistry*, **2006**, 45, 12687-94	3.2	124
69	Time-resolved structural studies at synchrotrons and X-ray free electron lasers: opportunities and challenges. *Current Opinion in Structural Biology*, **2012**, 22, 651-9	8.1	120
68	Conformational differences between the Pfr and Pr states in Pseudomonas aeruginosa bacteriophytochrome. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 15639-44	11.5	118
67	Application of singular value decomposition to the analysis of time-resolved macromolecular x-ray data. *Biophysical Journal*, **2003**, 84, 2112-29	2.9	111
66	Proton-transfer and hydrogen-bond interactions determine fluorescence quantum yield and photochemical efficiency of bacteriophytochrome. *Proceedings of the National Academy of Sciences of the United States of America*, **2010**, 107, 9170-5	11.5	108
65	Laue crystallography: coming of age. *Journal of Synchrotron Radiation*, **1999**, 6, 891-917	2.4	102
64	Structure of cyanide methemoglobin. *Journal of Molecular Biology*, **1976**, 104, 687-706	6.5	95
63	Short hydrogen bonds in photoactive yellow protein. *Acta Crystallographica Section D: Biological Crystallography*, **2004**, 60, 1008-16		91
62	Structure of the redox sensor domain of Azotobacter vinelandii NifL at atomic resolution: signaling, dimerization, and mechanism. *Biochemistry*, **2007**, 46, 3614-23	3.2	90
61	Insights into specificity of cleavage and mechanism of cell entry from the crystal structure of the highly specific Aspergillus ribotoxin, restrictocin. *Structure*, **1996**, 4, 837-52	5.2	86
60	The LOV2 domain of phototropin: a reversible photochromic switch. *Journal of the American Chemical Society*, **2004**, 126, 4512-3	16.4	83

59	Protein kinetics: structures of intermediates and reaction mechanism from time-resolved x-ray data. *Proceedings of the National Academy of Sciences of the United States of America*, **2004**, 101, 4799-804	11.5	77
58	Crystal structures of deoxy and CO-bound bjFixLH reveal details of ligand recognition and signaling. *Biochemistry*, **2005**, 44, 4627-35	3.2	72
57	Structure of nitric oxide hemoglobin. *Journal of Molecular Biology*, **1979**, 134, 401-17	6.5	70
56	Time-resolved structures of macromolecules at the ESRF: Single-pulse Laue diffraction, stroboscopic data collection and femtosecond flash photolysis. *Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, **1997**, 398, 69-84	1.2	69
55	A structural pathway for signaling in the E46Q mutant of photoactive yellow protein. *Structure*, **2005**, 13, 55-63	5.2	69
54	Freeze trapping of reaction intermediates. *Current Opinion in Structural Biology*, **1995**, 5, 656-63	8.1	69
53	Addition at the molecular level: signal integration in designed Per-ARNT-Sim receptor proteins. *Journal of Molecular Biology*, **2010**, 400, 477-86	6.5	66
52	Optical studies of a bacterial photoreceptor protein, photoactive yellow protein, in single crystals. *Biochemistry*, **1995**, 34, 879-90	3.2	65
51	Fluorescence quantum yield and photochemistry of bacteriophytochrome constructs. *Physical Chemistry Chemical Physics*, **2011**, 13, 11985-97	3.6	63
50	Time-resolved crystallographic studies of light-induced structural changes in the photosynthetic reaction center. *Proceedings of the National Academy of Sciences of the United States of America*, **2004**, 101, 5982-7	11.5	62
49	Chromophore conformation and the evolution of tertiary structural changes in photoactive yellow protein. *Structure*, **2004**, 12, 1039-45	5.2	59
48	Crystal structures of Aureochrome1 LOV suggest new design strategies for optogenetics. *Structure* , **2012**, 20, 698-706	5.2	56
47	Influence of the crystalline state on photoinduced dynamics of photoactive yellow protein studied by ultraviolet-visible transient absorption spectroscopy. *Biophysical Journal*, **2006**, 90, 4224-35	2.9	44
46	Changes in quaternary structure in the signaling mechanisms of PAS domains. *Biochemistry*, **2008**, 47, 12078-86	3.2	43
45	Time-resolved crystallographic studies of the heme domain of the oxygen sensor FixL: structural dynamics of ligand rebinding and their relation to signal transduction. *Biochemistry*, **2007**, 46, 4706-15	3.2	43
44	The frontiers of time-resolved macromolecular crystallography: movies and chirped X-ray pulses. *Faraday Discussions*, **2003**, 122, 65-77; discussion 79-88	3.6	39
43	Analysis of experimental time-resolved crystallographic data by singular value decomposition. *Acta Crystallographica Section D: Biological Crystallography*, **2004**, 60, 860-71		38
42	Structure of fluoride methemoglobin. *Journal of Molecular Biology*, **1976**, 104, 723-8	6.5	38

41	The primary structural photoresponse of phytochrome proteins captured by a femtosecond X-ray laser. *ELife*, **2020**, 9,	8.9	37
40	Crystal structure of a photoactive yellow protein from a sensor histidine kinase: conformational variability and signal transduction. *Proceedings of the National Academy of Sciences of the United States of America*, **2003**, 100, 1649-54	11.5	36
39	Light Signaling Mechanism of Two Tandem Bacteriophytochromes. *Structure*, **2015**, 23, 1179-89	5.2	35
38	FTIR Spectroscopy Revealing Light-Dependent Refolding of the Conserved Tongue Region of Bacteriophytochrome. *Journal of Physical Chemistry Letters*, **2014**, 5, 2512-2515	6.4	35
37	Primary reactions of bacteriophytochrome observed with ultrafast mid-infrared spectroscopy. *Journal of Physical Chemistry A*, **2011**, 115, 3778-86	2.8	34
36	Time-resolved crystallography and protein design: signalling photoreceptors and optogenetics. *Philosophical Transactions of the Royal Society B: Biological Sciences*, **2014**, 369, 20130568	5.8	30
35	The room temperature crystal structure of a bacterial phytochrome determined by serial femtosecond crystallography. *Scientific Reports*, **2016**, 6, 35279	4.9	29
34	Coiled-coil dimerization of the LOV2 domain of the blue-light photoreceptor phototropin 1 from Arabidopsis thaliana. *Acta Crystallographica Section F: Structural Biology Communications*, **2013**, 69, 1316-21		29
33	Ultrafast time-resolved crystallography. *Nature Structural Biology*, **1998**, 5 Suppl, 641-3		27
32	Extraction of accurate structure-factor amplitudes from Laue data: wavelength normalization with wiggler and undulator X-ray sources. *Journal of Synchrotron Radiation*, **2000**, 7, 236-44	2.4	27
31	Optical monitoring of protein crystals in time-resolved x-ray experiments: Microspectrophotometer design and performance. *Review of Scientific Instruments*, **1994**, 65, 1506-1511	1.7	26
30	Photocycle populations with femtosecond excitation of crystalline photoactive yellow protein. *Chemical Physics Letters*, **2016**, 654, 63-71	2.5	25
29	Resolution of structural heterogeneity in dynamic crystallography. *Acta Crystallographica Section D: Biological Crystallography*, **2013**, 69, 946-59		24
28	Laue diffraction. *Methods in Enzymology*, **1997**, 277, 433-47	1.7	24
27	Structural heterogeneity of cryotrapped intermediates in the bacterial blue light photoreceptor, photoactive yellow protein. *Photochemistry and Photobiology*, **2004**, 80, 7-14	3.6	24
26	The structure of metmanganoglobin. *Journal of Molecular Biology*, **1976**, 104, 669-85	6.5	23
25	Reply to Contradictions in X-ray structures of intermediates in the photocycle of photoactive yellow protein *Nature Chemistry*, **2014**, 6, 259-60	17.6	20
24	Structure of azide methemoglobin. *Journal of Molecular Biology*, **1979**, 134, 419-29	6.5	20

23	Structural basis for light control of cell development revealed by crystal structures of a myxobacterial phytochrome. *IUCrJ*, **2018**, 5, 619-634	4.7	20
22	Bacteriophytochrome Photoisomerization Proceeds Homogeneously Despite Heterogeneity in Ground State. *Biophysical Journal*, **2016**, 111, 2125-2134	2.9	19
21	Analytical trapping: extraction of time-independent structures from time-dependent crystallographic data. *Journal of Structural Biology*, **2004**, 147, 211-22	3.4	19
20	Purification and initial characterization of a putative blue light-regulated phosphodiesterase from Escherichia coli. *Photochemistry and Photobiology*, **2004**, 80, 542-7	3.6	19
19	Synchrotron radiation applications to macromolecular crystallography. *Current Opinion in Structural Biology*, **1997**, 7, 689-96	8.1	18
18	Structure of isothiocyanate methemoglobin. *Journal of Molecular Biology*, **1981**, 145, 815-24	6.5	17
17	Structure of imidazole methemoglobin. *Journal of Molecular Biology*, **1981**, 147, 325-35	6.5	17
16	Structure of hemoglobin reconstituted with mesoheme. *Journal of Molecular Biology*, **1977**, 113, 419-30	6.5	17
15	The structure of hemoglobin reconstituted with deuteroheme. *Journal of Molecular Biology*, **1976**, 106, 895-902	6.5	16
14	The primary photophysics of the Avena sativa phototropin 1 LOV2 domain observed with time-resolved emission spectroscopy. *Photochemistry and Photobiology*, **2011**, 87, 534-41	3.6	15
13	Signal to noise considerations for single crystal femtosecond time resolved crystallography of the Photoactive Yellow Protein. *Faraday Discussions*, **2014**, 171, 439-55	3.6	14
12	Cluster analysis of time-dependent crystallographic data: Direct identification of time-independent structural intermediates. *Biophysical Journal*, **2011**, 100, 440-9	2.9	14
11	Crystallographic studies on manganese hemoglobin. *Journal of the American Chemical Society*, **1974**, 96, 5259-61	16.4	9
10	Pigment-protein interactions in phytochromes probed by fluorescence line narrowing spectroscopy. *Journal of Physical Chemistry B*, **2013**, 117, 14940-50	3.4	7
9	Laue diffraction and time-resolved crystallography: a personal history. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2019**, 377, 20180243	3	6
8	Structure of the response regulator RPA3017 involved in red-light signaling in Rhodopseudomonas palustris. *Acta Crystallographica Section F, Structural Biology Communications*, **2015**, 71, 1215-22	1.1	4
7	Structure refinement against synchrotron Laue data: strategies for data collection and reduction. *Acta Crystallographica Section D: Biological Crystallography*, **1998**, 54, 367-77		3
6	Structural Heterogeneity of Cryotrapped Intermediates in the Bacterial Blue Light Photoreceptor, Photoactive Yellow Protein. *Photochemistry and Photobiology*, **2007**, 80, 7-14	3.6	2

List of Publications

5	Femtosecond Studies of the Initial Events in the Photocycle of Photoactive Yellow Protein (PYP)381-390		2
4	Femtosecond structural photobiology. *Science*, **2018**, 361, 127-128	33.3	1
3	Picosecond Structural Dynamics at the Advanced Photon Source. *Synchrotron Radiation News*, **2010**, 23, 18-25	0.6	
2	Small crystals, fast dynamics and noisy data are indeed beautiful. *IUCrJ*, **2017**, 4, 303-305	4.7	
1	The Relation of Hemoglobin Ligand Binding Kinetics to Structure **1982**, 135-140		