Biophotonics -- Top Collaborators

Departments of
Bioengineering, Molecular and Structural Biology, Pharmacology, Scripps Research Institute, Salk Institute for Biological Studies, Chemistry and Biochemistry, Biophotonics Technology Center

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Editor: Frank Dininno

Jin Zhang

Contact Information	
profile	https://pharmacology.ucsd.edu/faculty/department-faculty/jin-zhang.html
email	jzhang32@health.ucsd.edu
department	Department of Pharmacology
title	Vice Chair, Professor
research focus	Genetically Encoded Fluorescent Biosensors
affiliations	Bio-Optical Probe Advancement Center
lab website	https://jinzhanglab.ucsd.edu/
publications	Google Scholar

Most-Cited Papers

1. 2002 *Nature* Creating new fluorescent probes for cell biology (2602)
2. 2001 *PNAS* Genetically encoded reporters of protein kinase A activity reveal impact of substrate tethering (751)
3. 2017 *Cell* The Growing and Glowing Toolbox of Fluorescent and Photoactive Proteins (722)
4. 2003 *JCB* A genetically encoded fluorescent reporter reveals oscillatory phosphorylation by protein kinase C (675)

Most Recent Papers

1. 2025 *Cell* Aberrant phase separation of two PKA RIβ neurological disorder mutants leads to mechanistically distinct signaling deficits
2. 2025 *Nature* Far-red chemigenetic kinase biosensors enable multiplexed and super-resolved imaging of signaling networks
3. 2025 *Nature* Bright and photostable yellow fluorescent proteins for extended imaging
4. 2025 *PNAS* Lysosomal PIP3 revealed by genetically encoded lipid biosensors

Most Relevant Papers

1. 2019 *Nature* A genetically encoded near-infrared fluorescent calcium ion indicator
2. 2018 *Nature* Single-fluorophore biosensors for sensitive and multiplexed detection of signalling activities
3. 2015 *Nature* Ratiometric biosensors based on dimerization-dependent fluorescent protein exchange
4. 2007 *RSC* FRET-based biosensors for protein kinases: illuminating the kinome

Notes

Dr. Zhang's lab does both fluorescence protein engineering and purification.

Akif Tezcan

Contact Information

Contact Information	
profile	https://matsci.ucsd.edu/faculty/akif-tezcan
email	tezcan@ucsd.edu
department	Department of Chemistry and Biochemistry
title	Professor

Contact Information	
research focus	Protein Design\Analysis, Self-Assembled Crystal Arrays
affiliations	UCSD MRSEC
lab website	http://tezcan.ucsd.edu/
publications	Google Scholar

Most-Cited Papers

1. 2002 *Science* Nitrogenase MoFe-Protein at 1.16 Å Resolution: A Central Ligand in the FeMo-Cofactor (1362)
2. 2012 *Nature* Metal-directed, chemically tunable assembly of one-, two-and three-dimensional crystalline protein arrays (413)
3. 2005 *RSA* Structural basis of biological nitrogen fixation (410)
4. 1998 *JACS* Effects of ligation and folding on reduction potentials of heme proteins (327)

Most Recent Papers

1. 2025 *JAC* Efficient analysis of small-angle scattering curves for large biomolecular assemblies using Monte Carlo methods
2. 2025 *ChemRxiv* A de novo designed protein with versatile metal binding and tunable hydrolytic activity
3. 2025 *JACS* De Novo Design of Proteins for Autocatalytic Isopeptide Bond Formation
4. 2025 *Cell* Design of light-and chemically responsive protein assemblies through host-guest interactions

Relevant Papers

1. 2025 *Cell* Design of light-and chemically responsive protein assemblies through host-guest interactions
2. 2023 *JACS* Spatially patterned, porous protein crystals as multifunctional materials
3. 2022 *Biochemistry* Enzyme-Directed Functionalization of Designed, Two-Dimensional Protein Lattices

Notes

Dr. Akif's lab is capable of performing protein purification, as detailed in his lab website. However, his specialization is not in the field of fluorescence, but he does demonstrate the ability to tag his proteins by appending fluorescent proteins to them.

Ashok Deniz

Contact Information	
profile	https://www.scripps.edu/faculty/deniz/
email	deniz@scripps.edu
department	Department of Integrative Structural and Computational Biology
title	Professor
research focus	Single-Molecule Biopolymer Physics
affiliations	Scripps Research Institute
lab website	https://www.scripps.edu/deniz/
publications	Google Scholar

Most-Cited Papers

1. 1999 *PNAS* Single-molecule fluorescence spectroscopy of enzyme conformational dynamics and cleavage mechanism (736)
2. 1999 *PNAS* Single-pair fluorescence resonance energy transfer on freely diffusing molecules: Observation of Förster distance dependence and subpopulations (703)
3. 2000 *PNAS* Single-molecule protein folding: Diffusion fluorescence resonance energy transfer studies of the denaturation of chymotrypsin inhibitor 2 (586)
4. 2016 *eLife* Nucleophosmin integrates within the nucleolus via multi-modal interactions with proteins displaying R-rich linear motifs and rRNA (513)

Most Recent Papers

1. 2025 *Cell* BPS2025 - Exploring the structural diversity and condensate behavior of PopZ orthologs across α-proteobacteria
2. 2025 *Cell* BPS2025 - Biomolecular condensates induce local membrane potentials
3. 2025 *Cell* BPS2025 - Single-molecule conformational complexity in the disordered regions of fusion oncoproteins
4. 2025 *Cell* BPS2025 - Single-molecule FRET to study molecular mechanisms of biomolecular condensation

Most Relevant Papers

1. 2011 *Nature* Visualizing a one-way protein encounter complex by ultrafast single-molecule mixing

2. 2008 *ACS* A General and Efficient Method for the Site-Specific Dual-Labeling of Proteins for Single Molecule Fluorescence Resonance Energy Transfer
3. 2002 *ACS* Unnatural Amino Acid Mutagenesis of Green Fluorescent Protein
4. 2001 *ACS* Monitoring the Conformational Fluctuations of DNA Hairpins Using Single-Pair Fluorescence Resonance Energy Transfer

Notes

Dr. Deniz seems to be more focused on imaging known proteins by attaching fluorophores to them rather than *de novo* protein engineering.

David Millar

Contact Information	
profile	https://www.scripps.edu/faculty/millar
email	millar@scripps.edu
department	Department of Integrative Structural and Computational Biology
title	Professor
research focus	Fluorescence Probing of Protein Conformational Dynamics
affiliations	Scripps Research Institute
lab website	https://www.scripps.edu/millar/Millar_Lab/Home.html
publications	Pubmed, Google Scholar

Most-Cited Papers

1. 1991 *ACS* Dynamics of mismatched base pairs in DNA (310)
2. 1999 *Nature* Stability of hairpin ribozyme tertiary structure is governed by the interdomain junction (218)
3. 2002 *ACS* Solvent-Dependent Photoinduced Tautomerization of 2-(2‘-Hydroxyphenyl)benzoxazole (212)
4. 1982 *AIP* Torsion and bending of nucleic acids studied by subnanosecond time-resolved fluorescence depolarization of intercalated dyes (192)

Most Recent Papers

1. 2025 *eLife* Distinct activation mechanisms of CXCR4 and ACKR3 revealed by single-molecule analysis of their conformational landscapes
2. 2025 *Research Square* Early HIV-1 Gag Assembly on Lipid Membrane with vRNA
3. 2023 *frontiers* Conformational Dynamics of DNA Polymerases Revealed at the Single-Molecule Level
4. 2023 *Nucleic Acids Research* Computational investigation of the impact of core sequence on immobile DNA four-way junction structure and dynamics

Most Relevant Papers

1. 2021 *eLIfe* Single-molecule view of coordination in a multi-functional DNA polymerase
2. 2013 *ACS* Dynamics of site switching in DNA polymerase
3. 2011 *JMB* Single-molecule studies reveal that DEAD box protein DDX1 promotes oligomerization of HIV-1 Rev on the Rev response element
4. 2006 *Angewandte Chemie Int. Ed.* The Effects of Antibodies on Stilbene Excited-State Energetics