

## CV Petra Fromme

**Regents' Professor, Arizona State University**  
**Professor of Chemistry and Biochemistry**  
**School of Molecular Sciences**  
**Paul V Galvin Professor**  
**Director, Center for Applied Structural Discovery at the Biodesign Institute**

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### ***Academic Positions***

- 2012 - present** Paul V Galvin Professor, Arizona State University
- 2009 - present** Member of the graduate faculty in the Biological Design Program, Arizona State University
- 2008 - present** Member of the graduate faculty in the Plant Biology Program, Arizona State University
- 2007 - present** Affiliate faculty member, Department of Physics, Arizona State University
- 2002 - present** Professor of Chemistry and Biochemistry, Arizona State University
- 1999 - 2002** Associate Professor, (C2) Max Volmer Institute, Chemistry Department, Technical University, Berlin
- 1993 - 1999** Assistant Professor, (C1) Max Volmer Institute, Chemistry Department, Technical University, Berlin
- 1985 - 1993** Teaching and Research Assistant, Max Volmer Institute, Chemistry Department, Technical University, Berlin

### ***Education/Scientific Degrees***

- 1983** BS in Biochemistry (Vordiplom), Department of Chemistry, Free University Berlin
- 1985** MS in Biochemistry (Diplom), Department of Chemistry, Free University Berlin
- 1988** Ph.D. in: Chemistry (Dr. rer. nat), Department of Chemistry, Technical University Berlin

**1998** Habilitation in Physical Chemistry, Department of Chemistry,  
Technical University Berlin

### ***Awards and Honors***

**1989** PhD thesis recognized for the outstanding doctoral thesis with the Joachim-Tiburtius-Award

**2001** Lemberg Fellowship of the Australian Academy of Science

**2001** Robin Hill Award of the International Photosynthesis Society

**2001** Biologie 2001 Award of the Academy of Science of Göttingen

**2009** Visiting travel fellowship, University of Sydney

**2012** Faculty Achievement Award for Defining Edge Research: Natural Sciences and Mathematics. Arizona State University

**2012** Paul V Galvin Professorship awarded

**2014** Director of the Center of Applied Structural Discovery

**2016** Regents' Professor

### ***Professional Activities and Committee Service***

**1986 -** Member of the Society for Biological Chemistry

**2001 -** Member of Faculty of 1000

**2004 -** Member of the Biophysical Society

**2004 -** Member of the International Society of Photosynthesis Research

**2005 -** Member of the American Chemical Society

**2006 - 2014** Member of the Advisory Board of the Centre for Membrane Pumps in Cells and Disease (PUMPKin), Aarhus, Denmark

**2008-2012** NIH, member of the Biochemistry and Biophysics of Membranes (BBM) study section of the NIH

### **My Graduate Advisors and Postdoctoral Sponsors**

Gräber, Peter	University of Freiburg	<i>Graduate Advisor</i>
Lubitz, Wolfgang	Max Planck Institute für Strahlenchemie	<i>Habilitation Sponsor</i>

Witt, Horst Tobias	Deceased	<i>Postdoctoral Sponsor</i>
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## Supervisory work:

### **Current Undergraduates Supervised**

<b>Name</b>	<b>Affiliation</b>	<b>Position</b>
Mo, Gina	Arizona State University	Undergraduate researcher
Schaffer, Alex	Arizona State University	Undergraduate researcher
Sepich, Caroline	Arizona State University	Undergraduate researcher
Jernigan, Rebecca	Arizona State University	Undergraduate researcher
Moran, Michael	Arizona State University	Undergraduate researcher
Tran, Minh	Arizona State University	Undergraduate researcher

### **Current Graduate Students Supervised**

<b>Name</b>	<b>Affiliation</b>	<b>Degree sought</b>	<b>Start</b>
Boyd, Ryan	Arizona State University	PhD	08/2016
Lewis, Christine	Arizona State University	PhD	01/2016
Robertson, Karie	Arizona State University	PhD	08/2016
Zhang, Shangji	Arizona State University	PhD	08/2016
Dobson, Zach	Arizona State University	PhD	08/2015
Stander, Natasha	Arizona State University	PhD	08/2015
Ketawala, Gihan	Arizona State University	PhD	08/2014
Nagaratnam, Nirupa	Arizona State University	PhD	08/2014
Baravati, Bobby	Arizona State University	PhD	08/2013
Coe, Jesse	Arizona State University	PhD	08/2013
Roy-Chowdhury, Shatabdi	Arizona State University	PhD	08/2012

**Graduate Students , graduated from my group at ASU**

<b>Name</b>	<b>Degree</b>	<b>Duration</b>	<b>Career</b>
Smith (Conrad), Chesie	PhD	08/2012-12/2016	Postdoctoral Fellow at the National Cancer Institute
Basu, Shibom	PhD	08/2011-12/2015	Postdoctoral Fellow at the Paul Scherrer Institute, Switzerland
Lee, Ho-Hsien	PhD	08/2011-03/2015	Postdoctoral Fellow at U of Taiwan
Yang, Jay-How	PhD	08/2011-02/2015	Research Scientist at Arizona State University
Gong, Zhen	PhD	08/2010-12/2014	Postdoctoral Fellow at Purdue University
Vaughn, Michael	PhD Co-advisor	08/2008-12/2014	Research Scientist at BioLogic
Wang, Dingji	PhD Co-advisor	08/2010-12/2014	Research Scientist at Shanghai Tech University
Kupitz, Christopher	PhD	08/2010-05/2014	Post-doc at University of Wisconsin Milwaukee
Flory, Justin	PhD	08/2010-05/2014	Assistant Research Scientist at Arizona State University
Paul, Robin	PhD	08/2010-05/2014	Postdoctoral Fellow at Indiana University School of Medicine
Rendek, Kimberley	PhD	08/2008-12/2012	Senior Research Chemist at Air Products
Zook, James	PhD	08/2008-05/2012	Research scientist, Arizona State University
Lawrence, Robert	PhD	08/2006-08/2011	Research Scientist, t-gen, Phoenix
Thangaraj, Balakumar	PhD	08/2006-12/2011	Research Scientist, Amgen
Hunter, Mark	PhD	08/2006-06/2011	Staff Scientist at SLAC National Accelerator Laboratory
Chauhan, Devendra	PhD	08/2005-06/2010	Research Scientists, Aragen Biosciences
Greyslak, Jason	MS	08/2008-05/2010	Graduated from Medical school
Bukhman-DeRuyter,	PhD	08/2004-07/2008	Research/Consultant Chemist

Yanina			at AK Steel
Varco-Merth, Benjamin	PhD	08/2004-07/2008	Postdoctoral Fellow at Ohio State University
Vanselow, Christopher	PhD	08/2003-07/2008	Senior MS Field Applications Specialist at Waters
Jolly, Craig	PhD	01/2003-12/2007	Data Scientist at the U.S. Agency for International Development
Ni, Da Qun	PhD	08/2002-05/2006	Research scientist, U of Florida

### **Current Postdoctoral Fellows in my group at ASU**

<b>Name</b>	<b>Current Affiliation</b>	<b>Position</b>
Martin-Garcia, Jose	Arizona State University	Research Scientist
Aguilar, Jose Meza	Arizona State University	Postdoctoral Fellow
Yang, Jay-How	Arizona State University	Research scientist
Zook, James	Arizona State University	Research Scientist

### **Previous Postdoctoral Fellows in my group at ASU**

<b>Name</b>	<b>Current Affiliation</b>	<b>Position</b>
Bacarizo Roa, Julio	U of Barcelona	Research scientist
Doerner, Katherina	European X-ray Free Electron Laser	Research scientist
Grotjohann, Ingo	University of Vienna	Research scientist
Hunter, Mark	SLAC National Accelerator Laboratory	Staff Scientist
Jolley, Craig	U.S. Agency for International Development	Data Scientist
Rendek, Kimberly	Air Products	Senior Research Chemist at
Subramanyam, Rajagopal	University of Hyderabad	Professor
Varco-Merth, Ben	Ohio State University	Postdoctoral Fellow

### ***Publications***

**2017**

150. Kupitz, C., Olmos, J.L., Jr., Holl, M., Tremblay, L., Pande, K., Pandey, S., Oberthur, D., Hunter, M., Liang, M., Aquila, A., Tenboer, J., Calvey, G., Katz, A., Chen, Y., Wiedorn, M.O., Knoska, J., Meents, A., Majriani, V., Norwood, T., Poudyal, I., Grant, T., Miller, M.D., Xu, W., Tolstikova, A., Morgan, A., Metz, M., Martin-Garcia, J.M., Zook, J.D., Roy-Chowdhury, S., Coe, J., Nagaratnam, N., Meza, D., Fromme, R., Basu, S., Frank, M., White, T., Barty, A., Bajt, S., Yefanov, O., Chapman, H.N., Zatsepin, N., Nelson, G., Weierstall, U., Spence, J., Schwander, P., Pollack, L., Fromme, P., Ourmazd, A., Phillips, G.N., Jr., Schmidt, M. (2017) Structural enzymology using X-ray free electron lasers. *Struct Dyn*, **4**(4), 044003.
149. Stagno, J.R., Liu, Y., Bhandari, Y.R., Conrad, C.E., Panja, S., Swain, M., Fan, L., Nelson, G., Li, C., Wendel, D.R., White, T.A., Coe, J.D., Wiedorn, M.O., Knoska, J., Oberthuer, D., Tuckey, R.A., Yu, P., Dyba, M., Tarasov, S.G., Weierstall, U., Grant, T.D., Schwieters, C.D., Zhang, J., Ferre-D'Amare, A.R., Fromme, P., Draper, D.E., Liang, M., Hunter, M.S., Boutet, S., Tan, K., Zuo, X., Ji, X., Barty, A., Zatsepin, N.A., Chapman, H.N., Spence, J.C., Woodson, S.A., Wang, Y.X. (2017) Structures of riboswitch RNA reaction states by mix-and-inject XFEL serial crystallography. *Nature*, **541**(7636), 242-246.
- 2016
148. Abdallah, B.G., Roy-Chowdhury, S., Fromme, R., Fromme, P., Ros, A. (2016) Protein Crystallization in an Actuated Microfluidic Nanowell Device. *Crystal Growth & Design*, **16**(4), 2074-2082.
147. Ayyer, K., Yefanov, O.M., Oberthur, D., Roy-Chowdhury, S., Galli, L., Mariani, V., Basu, S., Coe, J., Conrad, C.E., Fromme, R., Schaffer, A., Droner, K., James, D., Kupitz, C., Metz, M., Nelson, G., Xavier, P.L., Beyerlein, K.R., Schmidt, M., Sarrou, I., Spence, J.C.H., Weierstall, U., White, T.A., Yang, J.H., Zhao, Y., Liang, M.N., Aquila, A., Hunter, M.S., Robinson, J.S., Koglin, J.E., Boutet, S., Fromme, P., Barty, A., Chapman, H.N. (2016) Macromolecular diffractive imaging using imperfect crystals. *Nature*, **530**(7589), 202-+.
146. Coe, J. and Fromme, P. (2016) q Serial Femtosecond Crystallography Opens New Avenues for Structural Biology. *Protein and Peptide Letters*, **23**(3), 255-272.
145. Dorner, K., Martin-Garcia, J.M., Kupitz, C., Gong, Z., Mallet, T.C., Chen, L.Q., Wachter, R.M., Fromme, P. (2016) Characterization of Protein Nanocrystals Based on the Reversibility of Crystallization. *Crystal Growth & Design*, **16**(7), 3838-3845.
144. Dow, X.Y., Dettmar, C.M., DeWalt, E.L., Newman, J.A., Dow, A.R., Roy-Chowdhury, S., Coe, J.D., Kupitz, C., Fromme, P., Simpson, G.J. (2016) Second harmonic generation correlation spectroscopy for characterizing translationally diffusing protein nanocrystals. *Acta Crystallographica Section D-Structural Biology*, **72**, 849-859.
143. Edlund, P., Takala, H., Claesson, E., Henry, L., Dods, R., Lehtivuori, H., Panman, M., Pande, K., White, T., Nakane, T., Berntsson, O., Gustavsson, E., Bath, P., Modi, V., Roy-Chowdhury, S., Zook, J., Berntsen, P., Pandey, S., Poudyal, I., Tenboer, J., Kupitz, C., Barty, A., Fromme, P., Koralek, J.D., Tanaka, T., Spence, J., Liang, M.L., Hunter,

- M.S., Boutet, S., Nango, E., Moffat, K., Groenhof, G., Ihalainen, J., Stojkovic, E.A., Schmidt, M., Westenhoff, S. (2016) The room temperature crystal structure of a bacterial phytochrome determined by serial femtosecond crystallography. *Scientific Reports*, **6**.
142. Fromme, P. and Sali, A. (2016) Editorial overview: Biophysical and molecular biological methods. *Current Opinion in Structural Biology*, **40**, ix-Xi.
141. Hansen, D.T., Robida, M.D., Craciunescu, F.M., Loskutov, A.V., Dorner, K., Rodenberry, J.C., Wang, X., Olson, T.L., Patel, H., Fromme, P., Sykes, K.F. (2016) Polyclonal Antibody Production for Membrane Proteins via Genetic Immunization. *Scientific Reports*, **6**.
140. Herascu, N., Hunter, M.S., Shafiei, G., Najafi, M., Johnson, T.W., Fromme, P., Zazubovich, V. (2016) Spectral Hole Burning in Cyanobacterial Photosystem I with P700 in Oxidized and Neutral States. *Journal of Physical Chemistry B*, **120**(40), 10483-10495.
139. Kartner, F.X., Ahr, F., Calendron, A.L., Cankaya, H., Carbajo, S., Chang, G., Cirmi, G., Dorner, K., Dorda, U., Fallahi, A., Hartin, A., Hemmer, M., Hobbs, R., Hua, Y., Huang, W.R., Letrun, R., Maths, N., Mazalova, V., Mucke, O.D., Nanni, E., Putnam, W., Ravi, K., Reichert, F., Sarrou, I., Wu, X., Yahaghi, A., Ye, H., Zapata, L., Zhang, D., Zhou, C., Miller, R.J.D., Berggren, K.K., Graafsma, H., Meents, A., Assmann, R.W., Chapman, H.N., Fromme, P. (2016) AXSIS: Exploring the frontiers in attosecond X-ray science, imaging and spectroscopy. *Nuclear Instruments & Methods in Physics Research Section a-Accelerators Spectrometers Detectors and Associated Equipment*, **829**, 24-29.
138. Kessans, S.A., Linhart, M.D., Meador, L.R., Kilbourne, J., Hogue, B.G., Fromme, P., Matoba, N., Mor, T.S. (2016) Immunological Characterization of Plant-Based HIV-1 Gag/Dgp41 Virus-Like Particles. *Plos One*, **11**(3).
137. Martin-Garcia, J.M., Conrad, C.E., Coe, J., Roy-Chowdhury, S., Fromme, P. (2016) Serial femtosecond crystallography: A revolution in structural biology. *Archives of Biochemistry and Biophysics*, **602**, 32-47.
136. Munke, A., Andreasson, J., Aquila, A., Awel, S., Ayer, K., Barty, A., Bean, R.J., Berntsen, P., Bielecki, J., Boutet, S., Bucher, M., Chapman, H.N., Daurer, B.J., DeMirci, H., Elser, V., Fromme, P., Hajdu, J., Hantke, M.F., Higashiura, A., Hogue, B.G., Hosseinizadeh, A., Kim, Y., Kirian, R.A., Reddy, H.K.N., Lan, T.Y., Larsson, D.S.D., Liu, H.G., Loh, N.D., Maia, F.R.N.C., Mancuso, A.P., Muhlig, K., Nakagawa, A., Nam, D., Nelson, G., Nettelblad, C., Okamoto, K., Ourmazd, A., Rose, M., van der Schot, G., Schwander, P., Seibert, M.M., Sellberg, J.A., Sierra, R.G., Song, C.Y., Svenda, M., Timneanu, N., Vartanyants, I.A., Westphal, D., Wiedorn, M.O., Williams, G.J., Xavier, P.L., Yoon, C.H., Zook, J. (2016) Data Descriptor: Coherent diffraction of single Rice Dwarf virus particles using hard X-rays at the Linac Coherent Light Source. *Scientific Data*, **3**.
135. Nogly, P., Panneels, V., Nelson, G., Gati, C., Kimura, T., Milne, C., Milathianaki, D., Kubo, M., Wu, W.T., Conrad, C., Coe, J., Bean, R., Zhao, Y., Bath, P., Dods, R., Harimoorthy, R., Beyerlein, K.R., Rheinberger, J., James, D., DePonte, D., Li, C.F.,

- Sala, L., Williams, G.J., Hunter, M.S., Koglin, J.E., Berntsen, P., Nango, E., Iwata, S., Chapman, H.N., Fromme, P., Frank, M., Abela, R., Boutet, S., Barty, A., White, T.A., Weierstall, U., Spence, J., Neutze, R., Schertler, G., Standfuss, J. (2016) Lipidic cubic phase injector is a viable crystal delivery system for time-resolved serial crystallography. *Nature Communications*, **7**. Page numbers missing
134. Pande, K., Hutchison, C.D.M., Groenhof, G., Aquila, A., Robinson, J.S., Tenboer, J., Basu, S., Boutet, S., DePonte, D.P., Liang, M.N., White, T.A., Zatsepin, N.A., Yefanov, O., Morozov, D., Oberthuer, D., Gati, C., Subramanian, G., James, D., Zhao, Y., Koralek, J., Brayshaw, J., Kupitz, C., Conrad, C., Roy-Chowdhury, S., Coe, J.D., Metz, M., Xavier, P.L., Grant, T.D., Koglin, J.E., Ketawala, G., Fromme, R., Srajer, V., Henning, R., Spence, J.C.H., Ourmazd, A., Schwander, P., Weierstall, U., Frank, M., Fromme, P., Barty, A., Chapman, H.N., Moffat, K., van Thor, J.J., Schmidt, M. (2016) Femtosecond structural dynamics drives the trans/cis isomerization in photoactive yellow protein. *Science*, **352**(6286), 725-729.
133. Zhou, X.E., Gao, X., Barty, A., Kang, Y.Y., He, Y.Z., Liu, W., Ishchenko, A., White, T.A., Yefanov, O., Han, G.W., Xu, Q.P., de Waal, P.W., Suino-Powell, K.M., Boutet, S., Williams, G.J., Wang, M.T., Li, D.F., Caffrey, M., Chapman, H.N., Spence, J.C.H., Fromme, P., Weierstall, U., Stevens, R.C., Cherezov, V., Melcher, K., Xu, H.E. (2016) X-ray laser diffraction for structure determination of the rhodopsin-arrestin complex. *Scientific Data*, **3**.
- 2015
132. Li D, Stansfeld PJ, Sansom MSP, Keogh A, Vogeley L, Howe N, Lyons JA, Aragao D, Fromme P, Fromme R, Basu S, Grotjohann I, Kupitz C, Rendek K, Weierstall U, Zatsepin NA, Cherezov V, Liu W, Bandaru S, English NJ, Gati C, Barty A, Yefanov O, Chapman HN, Diederichs K, Messerschmidt M, Boutet S, Williams GJ, Seibert MM, Caffrey M *Ternary structure reveals mechanism of a membrane diacylglycerol kinase*. *Nature Communications* 2015 (**6**), e10140
131. Fromme, P *XFELs open a new era in structural chemical biology*, *Nature Chemical Biology* 2015 (**11**), p. 895-899
130. Conrad CE, Basu S, James D, Wang DJ, Schaffer A, Roy-Chowdhury S, Zatsepin NA, Aquila A, Coe J, Gati C, Hunter MS, Koglin JE, Kupitz C, Nelson G, Subramanian G, White TA, Zhao Y, Zook J, Boutet S, Cherezov V, Spence JCH, Fromme R, Weierstall U, Fromme P *A novel inert crystal delivery medium for serial femtosecond crystallography*. *IUCrJ* 2015 **2**: p. 421-430
129. Kang YY, Zhou XE, Gao X, He YZ, Liu W, Ishchenko A, Barty A, Sathish D, Yefanov O, Han GW, Xu QP, de Waal PW, Ke JY, Tan MHE, Zhang CH, Moeller A, West GM, Pascal BD, Van Eps N, Caro LN, Vishnivetskiy SA, Lee RJ, Suino-Powell KM, Gu X, Pal K, Ma JM, Zhi XY, Boutet S, Williams GJ, Messerschmidt M, Gati C, Zatsepin NA, Wang DJ, James D, Basu S, Roy-Chowdhury S, Conrad CE, Coe J, Liu HG, Lisova S, Kupitz C, Grotjohann I, Fromme R, Jiang Y, Tan MJ, Yang HY, Li J, Wang MT, Zheng Z, Li DF, Howe N, Zhao YM, Standfuss J, Diederichs K, Dong YH, Potter CS, Carragher B,



- Caffrey M, Jiang HL, Chapman HN, Spence JCH, Fromme P, Weierstall U, Ernst OP, Katritch V, Gurevich VV, Griffin PR, Hubbell WL, Stevens RC, Cherezov V, Melcher K, Xu HE (2015) *Crystal structure of rhodopsin bound to arrestin by femtosecond X-ray laser*. *Nature* 2015, **523**: p. 561-567.
128. Zook, J., G. Mo, Nicholas J. Sisco, Felicia M. Craciunescu, Debra T. Hansen, B. Baravati, Brian R. Cherry, Kathryn Sykes, Rebekka Wachter, Wade D. Van Horn, and P. Fromme, *NMR Structure of Francisella tularensis Virulence Determinant Reveals Structural Homology to Bet v1 Allergen Proteins*. *Structure*, 2015. **23**(6): p. 1116-1122.
  127. Gong Z, Martin-Garcia JM, Daskalova SM, Craciunescu FM, Song LS, Dorner K, Hansen DT, Yang JH, LaBaer J, Hogue BG, Mor TS, Fromme P *Biophysical Characterization of a Vaccine Candidate against HIV-1: The Transmembrane and Membrane Proximal Domains of HIV-1 gp41 as a Maltose Binding Protein Fusion*. *PloS one* 2015, **10** (8) e0136507
  126. Zhang, H., H. Unal, C. Gati, Gye W. Han, W. Liu, Nadia A. Zatsepin, D. James, D. Wang, G. Nelson, U. Weierstall, Michael R. Sawaya, Q. Xu, M. Messerschmidt, Garth J. Williams, S. Boutet, Oleksandr M. Yefanov, Thomas A. White, C. Wang, A. Ishchenko, Kalyan C. Tirupula, R. Desnoyer, J. Coe, Chelsie E. Conrad, P. Fromme, Raymond C. Stevens, V. Katritch, Sadashiva S. Karnik, and V. Cherezov, *Structure of the Angiotensin Receptor Revealed by Serial Femtosecond Crystallography*. *Cell*, 2015. **161**(4): p. 833-844.
  125. Fromme R, Ishchenko A, Metz M, Chowdhury SR, Basu S, Boutet S, Fromme P, White TA, Barty A, Spence JCH, Weierstall U, Liu W, Cherezov V (2015) *Serial femtosecond crystallography of soluble proteins in lipidic cubic phase*. *IUCrJ* 2015 (2): p. 545-551
  124. Abdallah BG, Zatsepin NA, Roy-Chowdhury S, Coe J, Conrad CE, Dorner K, Sierra RG, Stevenson HP, Camacho-Alanis F, Grant TD, Nelson G, James D, Calero G, Wachter RM, Spence JCH, Weierstall U, Fromme P, Ros A (2015) *Microfluidic sorting of protein nanocrystals by size for X-ray free-electron laser diffraction*. *Structural dynamics* 2015 (2) 4: e041719
  123. Yang, J.-H., I. Sarrou, J.M. Martin-Garcia, S. Zhang, K.E. Redding, and P. Fromme, *Purification and biochemical characterization of the ATP synthase from Heliobacterium modesticaldum*. *Protein Expression and Purification*, 2015. **114**: p. 1-8.
  122. Lawrence RM, Conrad CE, Zatsepin NA, Grant TD, Liu HG, James D, Nelson G, Subramanian G, Aquila A, Hunter MS, Liang MN, Boutet S, Coe J, Spence JCH, Weierstall U, Liu W, Fromme P, Cherezov V, Hogue B. *Serial femtosecond X-ray diffraction of enveloped virus microcrystals*. *Structural dynamics* 2015 **2** (4): e041720
  121. Fenalti, G., N.A. Zatsepin, C. Betti, P. Giguere, G.W. Han, A. Ishchenko, W. Liu, K. Guillemy, H. Zhang, D. James, D. Wang, U. Weierstall, J.C.H. Spence, S. Boutet, M. Messerschmidt, G.J. Williams, C. Gati, O.M. Yefanov, T.A. White, D. Oberthuer, M. Metz, C.H. Yoon, A. Barty, H.N. Chapman, S. Basu, J. Coe, C.E. Conrad, R. Fromme, P. Fromme, D. Tourwé, P.W. Schiller, B.L. Roth, S. Ballet, V. Katritch, R.C. Stevens, and V. Cherezov, *Structural basis for bifunctional peptide recognition at human  $\delta$ -opioid receptor*. *Nat Struct Mol Biol*, 2015. **22**(3): p. 265-268.

120. Chen, J., A. Kell, K. Acharya, C. Kupitz, P. Fromme, and R. Jankowiak, *Critical assessment of the emission spectra of various photosystem II core complexes*. Photosynthesis Research, 2015. **124**(3): p. 253-265.
119. Abdallah, B.G., S. Roy-Chowdhury, J. Coe, P. Fromme, and A. Ros, *High Throughput Protein Nanocrystal Fractionation in a Microfluidic Sorter*. Analytical Chemistry, 2015. **87**(8): p. 4159-4167.
- 2014
118. Weierstall, U., D. James, C. Wang, T.A. White, D. Wang, W. Liu, J.C.H. Spence, R. Bruce Doak, G. Nelson, P. Fromme, R. Fromme, I. Grotjohann, C. Kupitz, N.A. Zatsepin, H. Liu, S. Basu, D. Wacker, G. Won Han, V. Katritch, S. Boutet, M. Messerschmidt, G.J. Williams, J.E. Koglin, M. Marvin Seibert, M. Klinker, C. Gati, R.L. Shoeman, A. Barty, H.N. Chapman, R.A. Kirian, K.R. Beyerlein, R.C. Stevens, D. Li, S.T.A. Shah, N. Howe, M. Caffrey, and V. Cherezov, *Lipidic cubic phase injector facilitates membrane protein serial femtosecond crystallography*. Nature Communications, 2014. **5**: p. 3309.
117. Tenboer, J., S. Basu, N. Zatsepin, K. Pande, D. Milathianaki, M. Frank, M. Hunter, S. Boutet, G.J. Williams, J.E. Koglin, D. Oberthuer, M. Heymann, C. Kupitz, C. Conrad, J. Coe, S. Roy-Chowdhury, U. Weierstall, D. James, D. Wang, T. Grant, A. Barty, O. Yefanov, J. Scales, C. Gati, C. Seuring, V. Srajer, R. Henning, P. Schwander, R. Fromme, A. Ourmazd, K. Moffat, J.J. Van Thor, J.C.H. Spence, P. Fromme, H.N. Chapman, and M. Schmidt, *Time-resolved serial crystallography captures high-resolution intermediates of photoactive yellow protein*. Science, 2014. **346**(6214): p. 1242-1246.
116. Tarakeshwar, P., J.L. Palma, G.P. Holland, P. Fromme, J.L. Yarger, and V. Mujica, *Probing the Nature of Charge Transfer at Nano–Bio Interfaces: Peptides on Metal Oxide Nanoparticles*. The Journal of Physical Chemistry Letters, 2014. **5**(20): p. 3555-3559.
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### Books and Book Chapters

- Coe, J., C. Kupitz, S. Basu, C.E. Conrad, S. Roy-Chowdhury, R. Fromme, and P. Fromme, *Crystallization of Photosystem II for Time-Resolved Structural Studies Using an X-ray*

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## **Invited Lectures**

### **2017**

**Invited Speaker, Gordon Research Conference on Metals in Biology, Ventura, CA January 22-27, 2017**

Talk Title: New Insights into the water splitting mechanism of Photosystem II by time-resolved Femtosecond

**Invited Speaker, Western Photosynthesis Meeting 2017, Marshal, CA, January 5-8, 2017**

Talk Title: Femtosecond Crystallography of Photosystem II based on continuous diffraction

### **2016**

**Invited Speaker, NIH workshop on application of XFEL for biological research, Bethesda, MD, November 21, 2016**

Talk Title: Femtosecond crystallography opens a new era of medicinal structural biology

**Invited Speaker, University of Arizona Talk, Tucson, AZ, November 3-4, 2016**

Talk Title: Molecular movies of Nature's Nanoworld of Proteins with Free Free Electron Lasers

**Keynote Speaker, European Crystallography Meeting (ECM-30), Basel, Switzerland, August 28 - September 1, 2016**

Talk Title: Time-resolved femtosecond crystallography opens a new era in structural biology



**Invited Speaker, Gordon Research Conference on Diffraction Methods, Lewiston, ME, July 17-22, 2016**

Talk Title: Time-resolved femtosecond crystallography: towards molecular movies of biomolecules "in action"

**Invited Speaker, Korean Symposium on Biochem and Molecular Biology, Seoul, South Korea, May 18-20, 2016**

Talk Title: Time-resolved femtosecond crystallography opens a new era in structural biology

**Plenary Speaker, DESY-ASU Workshop 2016, Hamburg, Germany, April 27-29, 2016**

Talk Title: Perspectives in FELs & Structural Biology

**Invited Speaker Seminar, Harden Conference, Innsbruck, Austria, April 16-20, 2016**

Talk Title: Time-resolved femtosecond crystallography: towards molecular movies of the water splitting process in Photosystem II

**Invited Speaker Seminar, Johns Hopkins University School of Medicine, Baltimore, MD, April 13, 2016**

Talk Title: Time-resolved femtosecond crystallography opens a new era in structural biology

**Invited Speaker Seminar, ASBMB 2016, San Diego, CA, April 4-6, 2016**

Talk Title: Serial Femtosecond Crystallography Opens a New Era in Membrane Protein Structural Biology

**Invited Speaker Seminar, GRC Solar Fuels Meeting, Lucca, Italy, Feb 28-Mar 4, 2016**

Talk Title: Time-resolved Femtosecond Crystallography of Photosystem II

**Invited Speaker Seminar, 2016 BioXFEL International Conference, San Juan, Puerto Rico, Jan 13-16, 2016**

Talk Title: Time-resolved Femtosecond crystallography: towards molecular movies of molecules "in action"

**Invited Speaker Seminar, University of California, San Francisco, San Francisco, CA Jan 7, 2016.**

Talk Title: Femtosecond Crystallography: A revolution in Structural Biology

**Invited Speaker Seminar, Western Photosynthesis Conference 2016, Tabernash, CO, Jan 3-6, 2016.**

Talk Title: Serial Femtosecond Crystallography Opens a New Era In Structural Biology

## **2015**

**Plenary Lecture, 13th Conference of the Asian Crystallographic Association, Science City, Kolkata, India, Dec 5-8, 2015.**

Talk Title: *Serial Femtosecond Crystallography Opens a New Era In Structural Biology*

**ASU Physics Colloquium, Arizona State University, Tempe, AZ, November 5, 2015**

Talk: *Time-resolved femtosecond crystallography: towards molecular movies of molecules "in action"*

**SGC Symposium, Oxford, England, October 5-7, 2015**

Talk: *New avenues for Membrane Protein Structure Determination by serial femtosecond crystallography using X-FELs*

**ECM29 2015, Rovinj, Croatia, August 24-28, 2015.**

Talk Title: *SERIAL FEMTOSECOND CRYSTALLOGRAPHY: THE DAWN OF A NEW ERA IN STRUCTURAL BIOLOGY*

**RACIRI 2015, Rugen Island, Germany, August 22-29, 2015.**

Talk Title: *Structure and dynamics of photosystem II*

**IUPAC 2015, Busan, Korea, August 9-14, 2015**

Talk Title: *Serial Femtosecond Crystallography: The Dawn of a New Era in Structural Biology*

**Seminar, German Cancer Center, Heidelberg, Germany, July 15, 2015.**

Talk Title: *Femtosecond Crystallography Opens a New Era In Structural Biology and Structure-Based Drug Design*

**Seminar, European Molecular Biology Lab, Heidelberg, Germany, July 13, 2015.**

Talk Title: *New avenues for Membrane Protein Structure Determination by serial femtosecond crystallography using X-FELs*

**Seminar, German Cancer Center, Heidelberg, Germany, July 15, 2015.**

Talk Title: *Femtosecond Crystallography Opens a New Era In Structural Biology and Structure-Based Drug Design*

**2015 Gordon Research Seminars for Students and Postdocs, Proctor Academy, Andover, New Hampshire, June 27-28, 2015.**

Talk Title: *Towards molecular movies of Photosystems in action with Free Electron Lasers.*

**2015 Bioenergetics Gordon Research Conference, Proctor Academy, Andover, New Hampshire, June 21-26, 2015**

Talk Title: *Serial Femtosecond Crystallography: Towards Molecular Movies of Bioenergetic Processes*

**Plenary Lecture, 2015 BioXFEL Crystallization Workshop, June 1-3, 2015**

Talk Title: *Overview of Serial Crystallography*

**Seminar, POSTEC University, Pohang, Korea, May 14, 2015.**

Talk Title: Free Electron Lasers Open a New Era in Structural Biology

**Seminar, Yale University, New Haven, Connecticut, April 20-21, 2015**

Talk Title: *Serial Femtosecond Crystallography: The Dawn of a New Era in Structural Biology*

**Eastern Regional Photosynthesis Conference, Woods Hole, Massachusetts, April 17-19, 2015**

Talk Title: *Serial Femtosecond Crystallography: The Dawn of a New Era in Structural Biology*

**Membrane Protein Structures Meeting 2015, Argonne National Laboratory, Argonne, Illinois, April 9-12, 2015**

Talk Title: *Serial Femtosecond Crystallography: The Dawn Of A New Era In Structural Biology*

**Dorothy Hodgkin Lecture, Oxford University, Oxford, England, March 12, 2015**

Talk Title: *Serial Femtosecond Crystallography: The Dawn Of A New Era In Structural Biology*

**European XFEL User Meeting, DESY, Hamburg, Germany January 28-30, 2015**

*Structure and Dynamics of Photosystem II*

## **2014**

**Ringberg Conference on Integrating spectroscopic and theoretical methods to analyse molecular machines, Schloss Ringberg, Kreuth, Germany, December 10-13, 2014**

*Time-resolved Femtosecond crystallography: towards molecular movies of biomolecules*

**Seminar at the Dept of Chemistry and Biochemistry, University of Chicago, November 19, 2014**

*Serial Femtosecond Crystallography opens a new era in Structural Biology*

**Spirit of Senses, ASU, Oct 23**

*The fascinating molecular world of Photosynthesis*

**Seminar at the FORTH Institute, Heraklion, Greece September 24, 2014**

*Femtosecond crystallography opens a new era in Structural Biology*

**15<sup>th</sup> International Conference for the Crystallization of Biological Macromolecules ICCBM15, Hamburg, Germany, September 15-19, 2014**

*Small is beautiful: How to grow nanocrystals for femtosecond crystallography*

**EMBO Workshop, Hamburg, Germany, September 12-14, 2014**

*Serial Femtosecond crystallography and Methods of Nanocrystal Growth and Characterization*

**Photosynthesis Gordon Research Conference, New Hampshire, USA, August 10-15, 2014**  
*Time-resolved Femtosecond Nanocrystallography: Towards molecular Movies of important Processes in Bioenergy Conversion*

**Seminar at University of Queensland, Brisbane, Australia, August 5, 2014**

*Femtosecond crystallography opens new avenues for Structural Biology*

**2014 International Biophysics Congress, Engstrom Lecture, Brisbane Australia August 3-7, 2014**

*Femtosecond crystallography opens new avenues for Structural Biology*

**Symposium in honor of the 65<sup>th</sup> Birthday of Wolfgang Lubitz, Muelheim, Germany, July 23-25, 2014**

*Femtosecond crystallography opens a new era in Structural Biology*

**Workshop on Biomolecular Structure, Dynamics and Function: Membrane Proteins, Vanderbilt University, USA, May 2-4, 2014**

*Femtosecond Crystallography: A new Avenue for Structure Determination of Membrane Proteins*

**Beilstein Symposium, Prien, Germany, May 19-13, 2014**

*Femtosecond crystallography: dawn of a new Era in Structural Biology*

**Crystal 29, 29th Biennial Conference of the Society of Crystallographers in Australia and New Zealand, O'Reilly's Rainforest Retreat, Mt Lamington Plateau, Queensland, Australia, April 22-25, 2014**

*Femtosecond Crystallography: A new Avenue for Structure Determination of Membrane Proteins*

**Annual Meeting of the French Photosynthetic Society: Journées de la société française de Photosynthèse, Paris, France, April 14-15, 2014**

*Femtosecond crystallography of photosynthetic reaction centers*

**Dynamo symposium: Evolution, Biogenesis and Dynamics of Energy Transducing Membranes Paris, France, April 9-12, 2014**

*Time-resolved Femtosecond crystallography opens a new Era in Protein structure Determination*

**British Crystallographic Association Meeting, April 7-10, 2014**

*Femtosecond crystallography opens a new Era in Structural Biology*

**Keystone Symposium GPCRs and Frontiers in Structural Biology, March 31-April 4, 2014**

*Femtosecond Nanocrystallography of Membrane Proteins*

**Lorne Conference, Lorne, Australia, February 9-12, 2014**

*Femtosecond crystallography opens a new Era in Structural Biology Lorne conference on Protein Structure and Function*

**2013**

**Workshop of the Center for Ultrafast Imaging, DESY, Hamburg, Germany Nov 13, 2013**

*Time-resolved femtosecond nanocrystallography of photosynthetic membrane proteins opens a new era in Structural Biology*

**Workshop of the DFG Graduiertenkolleg, Halle , Germany November 6, 2013**

*Femtosecond crystallography of membrane proteins*

**Royal Society meeting on X-ray lasers in biology, London, UK October 14, 2013**

*Femtosecond nanocrystallography of membrane proteins opens a new era in Structural Biology*

**LSB Retreat, Durham, SC, USA September 13, 2013**

*Femtosecond crystallography opens a new Era in Structural Biology*

**Invited talk at Amgen, August 20, Santa Barbara, CA, USA 2013**

*Femtosecond crystallography opens a new Era in Structural Biology*

**16th International Photosynthesis Congress St. Louis, USA August 16, 2013**

*Time-resolved femtosecond nanocrystallography of Photosystem I and II*

**International Conference on Structural Genomics 2013-SLS, Sapporo, Japan, July 31, 2013**

*Femtosecond crystallography opens a new Era in Structural Biology*

**9th European Biophysics Conference, Lisbon, Portugal July 16, 2013**

*Femtosecond crystallography: the dawn of a new Era in Structural Biology*

**Time-resolved femtosecond nanocrystallography opens a new Era in Structural Biology**

**GRC conference on Bioenergetics, New Hampshire, USA June 25, 2013**

*Time-resolved femtosecond nanocrystallography opens a new Era in Structural Biology*

**Workshop on Applications of FELs in Structural Biology, MPI Heidelberg May 5, 2013**

*Towards time-resolved femtosecond crystallography of membrane proteins*

**STAIR Seminar University of Tennessee at Knoxville April 30, 2013**

*Femtosecond Nanocrystallography: Dawn of a new Era in Structural Biology”*

**Seminar Beckman Institute Urbana April 22, 2013**

*Femtosecond Nanocrystallography: Dawn of a new Era in Structural Biology”*

**Seminar U of Pennsylvania, Pittsburg April 4, 2013**

*Femtosecond s nanocrystallography of membrane proteins*

**Gordon Research Conference on drug efflux pumps, Ventura, CA, March17-21, 2013**

*New avenues for membrane protein structure determination including fs nanocrystallography*

**22th Western Photosynthesis Conference, Asilomar, CA, Jan 3-6, 2013**

*Time-resolved Femtosecond Nanocrystallography of Photosystem II and Photosystem I-ferredoxin*

**2012**

**NIH PSI: Biology Technology Workshop, Bethesda, December 12, 2012**

*Nanocrystals: New avenues in structural Biology*

**NIH ROADMAP workshop on Membrane Protein Structures and Complexes, CA San Francisco November, 27-30 2012**

*Femtosecond nanocrystallography of membrane proteins*

**Pittsburg Diffraction Conference, SLAC, Stanford, CA, October 1-2, 2012**

*Femtosecond nanocrystallography of membrane proteins*

**European Bioenergetic conference, Freiburg, Germany, September 16-24, 2012**

*Femtosecond nanocrystallography of membrane proteins opens a new Era for Structural Biology: Towards molecular movies of Biomolecules*

**European Crystallographic conference, Bergen, Norway, August 5-10, 2012**

*Femtosecond nanocrystallography of membrane proteins opens New Era in Structural Biology*

**Gordon Research Conference on Photosynthesis, Davidson College, NC, July 8-13, 2012**

*Keynote talk: Time resolved Femtosecond nanocrystallography of photosynthetic membrane proteins*

**Seminar DESY, Hamburg, June 11, 2012**

*Femtosecond nanocrystallography of membrane proteins opens new avenues for Structural Biology*

**ERICE workshop: Present and future methods for Biological Crystallography, Erice, Italy, May 31-June 10, 2012**

*Femtosecond nanocrystallography of membrane proteins opens a new era for Structural Biology*

**Seminar at the Biozentrum Basel, Basel, May 29, 2012**

*Femtosecond nanocrystallography of membrane proteins opens a new era for Structural Biology*

**Seminar at the Max Planck Institute for Biophysics, Frankfurt, May 24, 2012**

*New avenues for structure determination of membrane proteins including femtosecond nanocrystallography*

**Biophysical Society Meeting, San Francisco, Feb 25-29, 2012**

*Femtosecond nanocrystallography of membrane proteins: toward molecular movies of biomolecules*

**Keystone meeting on High Throughput Methods in Structural Biology**

**Keystone, Jan 22-27, 2012**

*Femtosecond nanocrystallography opens new avenues for membrane protein structure determination*

**Gordon Research Conference on Ligand Recognition and Molecular Gating, Ventura, CA, Jan 15-20, 2012**

*Femtosecond nanocrystallography of membrane proteins: toward molecular movies of biomolecules at work*

**Western Photosynthesis Conference, Asilomar, CA, Jan 5-8, 2012**

*Time-resolved Femtosecond nanocrystallography of photosynthetic membrane proteins*

**2011**

**Seminar Texas Tech University, Lubbock, Sept 29, 2011**

*Femtosecond nano-crystallography of membrane proteins*

**Annual meeting of the American Crystallographic Association, New Orleans, June 2, 2011**

*Femtosecond nano-crystallography of membrane proteins*

**The Evolution of Photosynthesis and Oxygenation of the Earth Symposium, Sydney, Australia, June 27-29, 2011**

*Key steps in the evolution of a water oxidation complex*

**Energy Summit, Washington, DC, June 2011**

*Development of an artificial oxygen evolving complex*

**Seminar University of Virginia, May 16, 2011**

*Star-wars in Crystallography: Femtosecond nano-crystallography opens new avenues for structure determination of membrane proteins*

**Delaware Membrane Symposium Newark, May 4, 2011**

*Femtosecond nano-crystallography of membrane proteins*

**Ringberg Workshop of the Max Planck Society on Research with FELs, Ringberg, Germany, Feb 28, 2011**

*Femtosecond nanocrystallography of membrane proteins: Results, challenges and future directions*

**Seminar, National Institute of Health, Bethesda, Jan 28, 2011**

*Femtosecond nano-crystallography of membrane proteins*

**BIO-FEL workshop, Berkeley, CA, Jan 21, 2011**

*Femtosecond nanocrystallography of membrane proteins*

**Western Photosynthesis Conference, Asilomar, CA, Jan 7, 2011**

*Femtosecond nanocrystallography of photosynthetic membrane proteins opens new avenues for X-ray crystallography*

**2010**

**Science at the edge seminar, Michigan State University, MI, October 22, 2010**

*Femtosecond nanocrystallography of membrane proteins*

**Nano-science seminar Arizona State University, Dept of Physics, September 20, 2010**

*Femtosecond nanocrystallography of membrane proteins*

**Seminar, University of Aarhus, Denmark, August 12, 2010**

*Femtosecond nanocrystallography, new avenues for structure determination of proteins*



**Annual Meeting of the center for Pumps and Kinases (PUMPKin), Denmark, August 10, 2010**

*Femtosecond nano-crystallography*

**Gordon Research Conference on Diffraction Methods in Structural Biology, Bates College, MA, USA, July 22, 2010**

*Femtosecond nanocrystallography: Opportunities for membrane protein analysis, Recent results from LCLS*

**ICCP 6 conference, New Mexico, USA, July 9, 2010**

*Porphyryns in Photosynthesis: Structure and function of photosynthetic membrane proteins*

**10th Cyanobacterial Molecular Biology Workshop, Lake Arrowhead, CA, June 15, 2010**

*Femtosecond nanocrystallography opens new avenues for structure determination of photosynthetic proteins*

**Cancer Membrane Symposium, Purdue University, May 8, 2010**

*Fundamentals of membrane protein Structural Biology*

**Biophysical Society Meeting, San Francisco, CA, USA, Feb. 22, 2010**

*Photosynthesis and solar energy conversion: Power for the future?*

**Biophysical Society Meeting, San Francisco, CA, USA, Feb. 22, 2010**

*A giant Photosystem I-IsiA supercomplex reveals adaptation of cyanobacteria to iron deficiency*

**Seminar, Washington State University, Pullman, Washington, USA, February 4, 2010**

*Journey into the micro-cosmos of photosynthesis*

**2009**

**Seminar, Department of Chemistry University of Sydney, Sydney, Australia, May 8, 2009**

*Does the fascinating world of photosynthesis provide new strategies for solar energy conversion?*

**Seminar, Australian National University Canberra, Canberra, Australia, April 7, 2009**

*Does the fascinating world of photosynthesis provide new strategies for bioenergy production?*

**Seminar Department of Biology University of Sydney, Sydney, Australia, March 8, 2009**

*Journey into the micro-cosmos of photosynthesis*

**Western Photosynthesis Conference, Asilomar, CA, Jan 8-11**

*Structure of Photosystem I and supercomplexes with ferredoxin and antenna proteins provide new implications for bioenergy production*

## **2008**

**Western Photosynthesis Conference, Jan 3-6, Asilomar, CA, Jan 3-6, 2008**

*A Giant PSI-IsiA complex unravels adaptation of photosynthesis to oxidative stress*

**Biophysics Seminar, Department of Physics, Arizona State University, Tempe, AZ, USA, Jan 30, 2008**

*Structure determination of membrane proteins*

**12th International conference of crystallization of Biological macromolecules (ICCBM 12) Cancun, Mexico, May 6-10, 2008**

*Crystallization of photosynthetic membrane proteins*

**National Institute of Health, Seminar of the Membrane Protein Interest Group, May 13, 2008, Bethesda, USA**

*Crystallization and structure of photosynthetic membrane proteins*

**Gordon Research Conference on Photosynthesis, South Hadley, USA, June 22-27, 2008**

*Structure and function of Photosystem I and its supercomplexes*

**European Bioenergetics Conference 2008 (EBEC 2008), Dublin, Ireland, July 20-25, 2008**

*Structure and function of photosynthetic membrane proteins*

**Rutgers University, Department of Chemistry, Departmental seminar, Nov 14, 2008**

*From sun-light to electron transfer: Structure and function of Photosystem I and II*

## **2007**

**TramP-6 colloquium on Membrane Protein Isolation, Crystallization and Structure Determination, Center for membrane pumps in Cells and Diseases, October 26, 2007 Aarhus, Denmark**

*Membrane protein crystallography: Crystallization and structure determination of photosynthetic membrane proteins*

**Meeting of the British and Irish Crystallographic Societies, Bernal Symposium, September 4, 2007, Dublin, Ireland**

*Crystallization and structure determination of photosynthetic membrane proteins*

**Eastern Regional Photosynthesis Conference April 20, 2007, Woodshole, USA**  
*Structure of photosynthetic membrane protein complexes: New findings and surprises*

**Annual Meeting of the Biophysical Society, March 3, 2007, Baltimore, USA**  
*Crystallization and structure determination of integral membrane proteins from photosynthetic organisms*

**16th Western Photosynthesis Conference, Jan 2-5, 2007, Asilomar, USA**  
*Structure and function of photosynthetic membrane proteins: Structural investigations of the PSI-ferredoxin and PSI-IsiA complex*

**Outreach talk: St. Paul's Academy Career Day, January 24, 2007, Phoenix, AZ**  
*From Biochemistry to the stars: A journey on photosynthesis into space and the microcosmos*

## **2006**

**Symposium Membrane proteins: Crystallization and Structure Highlights, Nov 13, 2006, Oslo, Norway, EMBIO-lecture:**  
*Crystallographic tour de force: Crystallization and structures of photosynthetic membrane proteins*

**International Conference on Porphyrins and Phthalocyanines ICCP-4, July 2-7, 2006, Rome, Italy**  
*New insights into the structure and function of Photosystem I and II*

**10th Annual Meeting of the Swedish Structural Biology Network, June 16-19, 2006, Tallberg, Sweden**  
*Structure and function of photosynthetic membrane proteins*

**3rd International Conference on Structure, Dynamics and Function of Proteins in Biological Membranes, May 14-19, 2006, Monte Verita, Switzerland**  
*Structure and function of Photosystem I*

**Oxygen meeting of the Agouron Institute, April 6-10, 2006, Santa Fe, USA**  
*Water oxidation in Photosystem II: unsolved questions based on the current status of X-ray crystallography and spectroscopy*

**University of Kentucky, Department of Chemistry and Biochemistry, Departmental seminar, March 24, 2006**  
*From sun-light to electron transfer: Structure and function of Photosystem I and II*

**2005**

**Iowa State University Department of Biochemistry and Biophysics, Departmental seminar, December 15, 2005**

*From sun-light to electron transfer: Structure and function of Photosystem I and II*

**Workshop on Biological Membranes: Structure and Function" at The Ohio Center for Theoretical Science (OCTS), The Ohio State University, October 8-11, 2005, Ohio, USA**

*From light to electron transfer: New insights into the structure and function of Photosystem I"*

**GDCh-Jahrestagung 2005, September 11-14, 2005, Düsseldorf, Germany**

*Eine faszinierende Reise in die Welt der Photosynthese*

**30th FEBS Congress and 9th IUBMB Conference, The Protein World: Proteins and Peptides-Structure, Function and Organization, July 2-7, 2005, Budapest, Hungary**

*Structure and function of Photosystem I and II*

**Workshop on Crystallization: focus on optimization techniques, soluble and membrane proteins NSLS Brookhaven, June 6-9 2005, Brookhaven, USA**

*Phase Diagrams: A Way for the rational design of membrane protein crystallization*

**ESRF Conference Molecular Bioenergetics of Cyanobacteria, 21-26 May, 2005 Sant Feliu de Guíxols, Spain**

*New insights into the structure and function of Photosystem I and II*

**First International Symposium on Chloroplast Bioengineering, May 2-7, University of Illinois UI, USA**

*Molecular insights into the structure and function of photosystem I and II*

**Departmental seminar, March 24, 2005, The University of Alabama, Tuscaloosa, Alabama, USA**

*From sun-light to electron transfer: Structure and function of Photosystem I and II*

**University of California Riverside, Seminar in Biochemistry and Molecular Biology, Riverside, CA, USA**

*From sun-light to electron transfer: Structure and function of Photosystem I and II*

**Western Photosynthesis Conference, Asilomar, USA**

*Overview of the current state of PS II crystallography and advances that may be expected during the next five years*

**2004**

**13th International Congress of Photosynthesis, August 2004, Montreal, Canada**

*Structure and function of Photosystem I and II*

**8th Cyanobacterial Molecular Biology Workshop, August 2004, Quebec, Canada**

*Structure and function of Photosystem I and II*

**International Satellite Meeting "Photosynthesis and Post-Genomic era: From Biophysics to Molecular Biology, a Path in the Research of Photosystem II, August 2004, Trois-Rivieres, Canada**

*Structure and function of Photosystem II*

**European Bioenergetics Conference, August 2004, Pisa, Italy**

*Structure and function of Photosystem I and II*

**15th International Conference on Photochemical Conversion and Storage of Solar Energy, July 2004, Paris, France**

*Structure and function of Photosystem I and II*

**Workshop on Crystallization of Membrane Proteins, NSLS User's Meeting, Brookhaven, May 2004, Brookhaven, USA**

*Overcoming the crystallization problems of Photosystem I and II*

**Annual Department of Energy Solar Photochemistry Research Conference, June 2004, Airline, USA**

*Structure and function of Photosystem I and II*

**Workshop on "Membranes, Membrane Proteins and Membrane Associated Molecular Machines, Howard Hughes Medical Institute Headquarters, May 2004, Chevy Chase, MA, USA**

*Crystallization of Photosystem I and II*

**Martin Kamen Memorial Lecture, University of California, San Diego, April 2004, San Diego, USA**

*From sunlight to electron transfer: structure and function of Photosystem I and II*

**48th Meeting of the Biophysical Society, February 2004, Baltimore, USA**

*Structure and function of Photosystem I and II*

## 2003

**Nobel Symposium on "Membrane Proteins: Structure, Function and Assembly", August 2003, Stockholm, Sweden**

*Structure and function of Photosystem I and II*

**29th Midwestern Photosynthesis Meeting, October 2003, Turkey Run, Indiana, USA**

*Structure and function of Photosystem I and II*

**6th International Symposium of the Volkswagen Stiftung on Intra- and Intermolecular Electron Transfer, October 2003, Walberberg, Germany**

*Structure and function of Photosystem I and II*

**Workshop on "Neutron Macromolecular Crystallography at the SNS" October 2003, Argonne, IL, USA**

*Neutron diffraction on membrane proteins*

**Gordon Conference on Physical Aspects of Photosynthesis, June 2002, New Hampshire, USA**

*Structure of Photosystem II: from evolution to aspects of water oxidation*

**ESRF Workshop on Molecular Bioenergetics of Cyanobacteria, Mai 2003, Aquafredda, Italy**

*Structure and function of Photosystem I and II*

**Photosystem I Workshop, Mai 2003, Berlin, Germany**

*Photosystem I from *Synechococcus elongatus*: Implication of its structure for Type I RCs*

**Seminar at the Department of Biochemistry and Molecular Biophysics at the University of Arizona, April 2003, Tucson, USA**

*Structure and function of Photosystem I and II*

**Gordon Research Conference on „Metals in Biology“, February 2003, Ventura, California, USA**

*Structure and function of Photosystem I and II*

**Workshop on Membraneproteins, February 2003, Grenoble, France**

*Crystallization and structure of membrane proteins*

**EMBO Workshop on Molecular Genetics and Biophysical Aspects of Photosynthesis, January 2003, Les Diablets, Switzerland**

*Structure and function of Photosystem I and II*

**12<sup>th</sup> Western Photosynthetic Conference, January 2003, Pacific Grove, California**

*Structure and function of Photosystem I and II*

**2002**

**Seminar at the Biology Department at Purdue University, 5.12.2002 Lafayette, Indiana, USA**

*Structure and function of Photosystem I and II*

**2<sup>nd</sup> Seminar at the Biology Department at Purdue University, 4.12.2002 Lafayette, Indiana, USA**

*Crystallization of membrane proteins*

**Seminar at the Chemistry Department of the University of UC Davis, 3.10.2002, California, USA**

*From sun light to electron transfer: Structure and function of Photosystem I and II*

**Biology Seminar at the University of Hamburg, 30.10.2002, Hamburg, Germany**

*From sun light to electron transfer: Structure and function of Photosystem I and II*

**Workshop on Expression and Structural Studies of Membrane Proteins, 28-29.10.2002 Gothenburg, Sweden**

*Crystallization and structure determination of membrane proteins*

**FEBS 2002 meeting, 20-25.10 2002, Istanbul, Turkey**

*Structure and function of Photosystem I and II*

**Seminar of Department of Chemistry, University of California, Davis, Sacramento, USA**

*From sun light to electron transfer: Structure and function of Photosystem I and II*

**Joint Symposium "German-American Frontiers of Chemistry" from the American Chemical Society, 23.-26.8. 2002, Durham NH, USA**

*Structure and function of Photosystem I and II*

**2002 International Meeting of the Protein Society, 17-21.8.2002, San Diego, USA**

*Crystallization and structure of Photosystem I at 2.5 Å resolution*

**Gordon Research Conference "Electron Donor-Acceptor Interactions", 11-16.8.2002, Salve Regina, Newport, USA**

*Electron transfer reactions in Photosystem I and II*

**XXXVth International Conference on Coordination Chemistry, 21-26.7.2002, Heidelberg, Germany**

*Structure and function of Photosystem I and II*

**Lecture at the Max Planck Institute of Biophysical Chemistry, Göttingen, Germany**

*Crystallization, structure and function of Photosystem I and II*

**Biochemistry-Seminar at the University of Minnesota, 8.5. 2002, Minnesota, USA**

*Structure and function of Photosystem I and II*

**Symposium "Membrane Proteins: Experimental and Computational Approaches to Understanding Cellular Function", University of Illinois, 4-5.5.2002, Illinois, USA**

*Structure and function of Photosystem I and II*

**"EMBO Workshop on Green and Heliobacteria; Molecular Biology, Structure and Function", 19-24.4. 2002, Passau, Germany**

*Structure of Photosystem I and II: Implications for the structure of the Photosystems of Green Bacteria and the evolution of photosynthetic reaction centers*

**Symposium "ISS meets Industry" Industrial Exhibition Hannover Messe, 19.4.2002 Hanover, Germany**

*"ISS and Biotechnology: Crystallization of membrane proteins under microgravity"*

**Royal Society Discussion Meeting 'Photosystem II – molecular structure and function' 13-14.3. 2002, London, UK**

*Implications on the function of Photosystem II based on the X-ray structural model*

**Kinetik Seminar der Deutschen Gesellschaft für Kristallzüchtung am Max-Planck-Institut für Physik komplexer Systeme, 14.-15.2. 2002, Dresden, Germany**

*Kristallisation von Membranproteinen unter Mikrogravitation*

**Seminar of the 'Sonderforschungsbereich' at the Ludwig-Maximilians-Universität München, 22.01.2002 Munich, Germany.**

*Structure and function of Photosystem I and II*

**Seminar of the Basel Chemical Society, 8.1.2002 Basel, Switzerland**

*Crystallization and structure of Photosystem I and II*

**2001**



**Lecture at the University College London, 18.12.2001 London, England**

*Structure of Photosystem I at 2.5 Å resolution*

**Meeting of the British Crystallographic Association, 17.12.2001 London, England**

*Crystallization and structure of Photosystem I and II*

**Lecture at the Akademie der Wissenschaften zu Göttingen, Ceremony of the 250th anniversary of the Akademie der Wissenschaften zu Göttingen, presentation of the**

**"Biologie 2001" Award, 16.11.2001, Göttingen, Germany**

*Leben durch Licht: Struktur und Funktion der Photosysteme I und II*

**Rundgespräch der Deutschen Forschungsgemeinschaft "Spektroskopie an Photorezeptoren", 22.-24.10.2001, Schloss Ringberg Tegernsee, Germany**

*Structure and function of Photosystem I and II*

**Mauloff Conferences 2001 of the Sfb Molecular Bioenergetics, 26.-29.9.2001, Mauloff, Germany**

*Structures of Photosystem I and II*

**Lecture at the University of Brisbane, 13.9.2001, Brisbane, Australia**

*From sun light to electron transfer: Structure and function of Photosystem I and II*

**Lecture at the University of Sydney, 11.9.2001, Sydney, Australia**

*From sun light to electron transfer: Structure and function of Photosystem I and II*

**Annual Meeting of the Australian Biophysics Society, 4.-7.9.2001, Katoomba, Australia**

*From sun light to electron transfer: Structure and function of Photosystem I and II*

**Biological Colloquium at the University of Wollongong, 30.8.2001, Canberra, Australia**

*From sun light to electron transfer: Structure and function of Photosystem I and II*

**Lecture at the Australian Academy of Science, Australian National University, 30.8.2001, Canberra, Australia**

*From sun light to electron transfer: Structure and function of Photosystem I and II*

**Satellite Meeting of the 12th International Photosynthesis Congress "Evolution of Photosynthesis", 29.-29.8.2001, Heron Island, Australia**

*Evolution of photosynthetic reaction centers*

**4th International Conference on Biological Physics, 30.7.-3.8.2001, Kyoto, Japan**

*Structure of Photosystem I and II*

**ICBP Satellite Meeting "Physical Aspects of Photobiological Processes: Photobiology and Energy Conversion, 27.- 28.7.2001, Nagoya, Japan**

*Crystallization and structure of Photosystem I and II*

**Advances Biophysics School on Lipid-Protein Interactions and the Organization of Membranes, 23.6.-3.7.2001, Szeged, Hungary**

*Structure and function of photosystem II and photosystem I reaction centers*

**Gordon Research Conference on Bioenergetics, 16.-22.6.2001, Meriden, NH, USA**

*Structure and function of Photosystem I*

**Euresco Conference "Molecular Bioenergetics of Cyanobacteria", 25.-30.5.2001, Obernai, France**

*Structure and function of Photosystem I and II*

**Frühjahrstagung der Deutschen Industrie zur Nutzung der Internationalen Raumstation, 15.2.2001, Berlin, Germany**

*Kristallisation von Membranproteinen unter Mikrogravitation*

**Symposium Photosynthetic Excitons, 22.3.2001, Amsterdam, The Netherlands**

*Structure of Photosystem I and II*

## **2000**

**Jacques Monod Conference on Photosynthesis, 18-22.11.2000, Roscoff, France**

*Structure of Photosystem I at 2.5 Å resolution*

**5th Nordic Conference on Photosynthesis, 26-28.10.2000, Elsinore, Sweden**

*From sun light to electron transfer: structure and function of Photosystem I and II*

**11th European Bioenergetics Conference, 9-14.9.2000, Brighton, UK**

*Structure and function of Photosystem I*

**13th International Congress on Photobiology and 28th Annual Meeting American Society for Photobiology, 1.-6.7.2000, San Francisco, USA**

*Structure and function of photosynthetic membrane proteins*

**Colloquium of the Institute for Physical and Theoretical Chemistry, TU-München, 17.2.2000, München, Germany**

*Structure and function of Photosystem I*

**Lecture at the Max-Planck-Institut für Strahlenchemie, 18.1.2000, Mühlheim, Germany**  
*Strukturbiologie von Membranproteinen*

**1999**

**Lecture at the Max-Planck Institut für Kolloid- und Grenzflächenforschung (1999)**  
**Golm, Germany**  
*Strukturbiologie von Membranproteinen*

**Impulstagung: Optionen für die Zukunft - Die industrielle Nutzung der Internationalen  
Raumstation für Biotechnologie und Medizin (1999), Industrie- und Handelskammer zu  
Köln, Germany**  
*Kristallisation von Membranproteinen unter Mikrogravitation*

**37<sup>th</sup> IUPAC Congress and 27<sup>th</sup> GDCh General Meeting (1999), Berlin, Germany**  
*Crystallization and structural model of Photosystem I*

**European Research Conference on Molecular Bioenergetics of Cyanobacteria (1999)**  
**Gmunden, Austria**  
*Crystallization and structural model of Photosystem I*

**Frontiers of science, 3<sup>th</sup> Joint venture Symposium of the Hebrew University and the TU-  
Berlin (1999), Jerusalem, Israel**  
*Structure and function of the large membrane-protein-complex Photosystem I*

**1998**

**Graduiertenkolleg "ungepaarte Elektronen" der Albert-Ludwigs-Universität Freiburg  
(1998)**  
*Struktur und Funktion des Photosystems I*

**XIth Congress on Photosynthesis (1998), Budapest, Hungary**  
*Crystallization and structural model of Photosystem I*

**Gordon Conference on the Chemistry and Biology of Tetrapyroles (1998), Newport RI, USA**

*Crystallization and structural model of Photosystem I*

**10th European Bioenergetics Conference (1998), Göteborg, Sweden**

*Crystallization and structural model of Photosystem I*

**Colloquium des Organischen Institutes der Universität Hamburg (1998)**

*Kristallisation und Strukturmodell des Photosystems I*

**2nd Hamburg Workshop on Liquid Crystals and Functional Materials (1998), Hamburg**

*Crystallization and structural model of the large membrane protein Photosystem I*

**Botanisches Colloquium der Universität Leipzig (1998)**

*Struktur und Funktion des Photosystems I*

**1997**

**First International Conference on Material and Life Sciences (1997), Harima, Japan**

*Crystallization and structural model of Photosystem I*

**7th Congress of the European Society for Photobiology (1997), Stresa, Italy**

*Crystallization and structural model of Photosystem I at 4 Å resolution*

**Gordon Conference on Biophysical Aspects of Photosynthesis (1997), New Hampton, USA**

*Crystallization and structural model of Photosystem I*

**ESRF Summer School on Biophysics of Photosynthesis (1997), London, UK**

*Three-dimensional crystallization and X-ray structure analysis: general aspects and crystallization and structural model of PS I derived from X-ray structure analysis at 4 Å resolution*

**European Research Conference on Tetrapyrole Photoreceptors in Photosynthetic Organisms (1997), Kork, Ireland**

*Crystallization and structural model of Photosystem I*

**1996**

**3th Nordic Congress on Photosynthesis (1996), Stockholm, Sweden**

*Crystallization and structure of Photosystem I at 4 Å resolution*

**Botanikertagung (1996), Düsseldorf, Germany**

*Crystallization and structure of Photosystem I*

**9th European Bioenergetic Conference (1996), Lovain-la-Neuve, Belgium**

*Photosystem I at 4 Å resolution - structural and evolutionary aspects*

**CNRS Conference Jacques Monod" Synthesis and Function of Photosynthetic Complexes" (1996), Aussois, France**

*Crystallization and structure of Photosystem I*

**1995**

**Karolinska Summer School: "Understanding Membrane Proteins" (1995), Stockholm, Sweden**

*Photosystem I*

**NVBMB (Dutch Society for Biochemistry and Molecular Biology) Meeting on "Membrane Proteins: from Sequence to structure" (1995), Groningen, The Netherlands**

*Crystallization and structure of Photosystem I at 4,5 Å resolution*

**Beckman Symposium on Protein Interaction (1995), Illinois, USA**

*Structure of Photosystem I at 4,5 Å resolution*

**1994**

**8th European Bioenergetics Conference EBEC (1994), Valencia, Spain**

*Structure of Photosystem I: Suggestions on the docking sites for Plastocyanin, Ferredoxin and the coordination of P700*

**FEBS Special Meeting on Biological Membranes (1994), Helsinki, Finland**

*Crystallization and structure of Photosystem*

**4th International Congress of Plant Molecular Biology (1994), Amsterdam, The Netherlands**

*Crystallization and structure of Photosystem I*

**8. Arbeitstagung Photosynthese (1994), Egisdorf, Germany**

*Crystallization and structure of Photosystem I*

**Deutsch-Schwedisches Symposium on "Structure and Function of Photosynthetic Reaction Centers" (1994), Freiburg, Germany**

*Crystallization and structure of Photosystem I at 6 Å resolution*

**38th Meeting of the American Biophysical Society (1994), New Orleans, USA**

*Crystals and structure of Photosystem I*

**1993**

**Gordon Research Conference "Biochemical Aspects. of Photosynthesis" (1993), New Hampton, USA**

*Crystallization and structure of Photosystem I at 6 Å resolution*

**Universität Stuttgart: Vortrag am Biologischen Institut (1993)**

*Struktur und funktion des Photosystems I*

**Jacques-Monod Conference on "Protein-protein interactions in the photosynthetic apparatus" (1993), Aussois, France**

*Crystallization and structure of Photosystem I at 6 Å resolution*

**1992**

**Johannes Gutenberg-Universität Mainz: Lecture at the Biochemical Colloquium, Institut für Biochemie am Fachbereich Chemie und Pharmazie (1992)**

*Struktur und Funktion des Photosystems I*

**7th European Bioenergetics Conference EBEC (1992), Helsinki, Finland**

*Crystallization and structure of Photosystem I at 6 Å resolution*

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