

Sol M. Gruner: Publications**Table of Contents**

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1. Geo. T. Reynolds and Sol M. Gruner (1975). A high gain image intensifier-spectroscopy system for *in vivo* studies of bioluminescence. *IEEE Trans. Nuc. Sci. NS-22*: 404-411.
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16. Sol M. Gruner, K.J. Rothschild and N.A. Clark (1982). X-ray diffraction and electron microscope study of phase separation in rod outer segment photoreceptor membrane multilayers. *Biophys. J.* *39*: 241-251.
17. J. Stamatoff, R.L. Lozier and S.M. Gruner (1982). X-ray diffraction studies of light interactions with bacteriorhodopsin. *Meth. in Enzymol.* *88*: 282-286.
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- 3b. Zihui Li, Hiroaki Sai, Scott C. Warren, Marleen Kamperman, Hitesh Arora, Sol M. Gruner, and Ulrich Wiesner. Metal Nanoparticle/Block Copolymer Composite Assembly and Disassembly
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- 163d. H. T. Philipp, M. Hromalik, M. Tate, L. Koerner, and S. M. Gruner (2010). Pixel Array Detector for X-ray Free-Electron Laser Experiments. The 16th Pan-American Synchrotron Radiation Instrumentation Conference, Argonne National Laboratory, Sept. 21-24, 2010.

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- 164d. C. U. Kim, I. Kriksunov, W. A. Miller, M. Cook, D. M. E. Szebenyi, S. M. Gruner (2010). High Pressure Cryocooling at MacCHESS. The 10th Conf. Of the Asian Crystallographic Association, BEXCO, Busan, Korea, Oct. 31 – Nov. 3, 2010
- 165d. R. E. Gillilan, C. U. Kim, S. M. Gruner (2009). High Prssure CryoSAXS. XIV International Conf. On Small-Angle Scattering, Oxford, UK, Sept. 13 – 18, 2009.
- 166d. C. U. Kim, I. Kriksunov, W. A. Miller, M. Cook, D. M. E. Szebeny, S. M. Gruner (2010). High Pressure Cryocooling at MacCHESS. Amer Cryst. Assoc. 2010 Annual Meeting, Chicago, IL, July 24 -29, 2010.
- 167d. C. U. Kim, S. M. Gruner (2010). High Pressure Study on Water inside Protein Crystals. IUCr Commission on High Pressure 2010, Park Vista, Gatlinburg, TN, Sept. 19 – 23, 2010.
- 168d. R. M. Baur, D. S. Dale, L Assoufid, X. Xiao, A. T. Macrander, S. Rutishauser, C. David, S. M. Gruner (2010). Development of a Talbot interferometer at the CHESS F3 beamline. The 10th International Conf. On X-ray Microscopy, Argonne National Laboratory, July 15 – Sept. 15, 2010.
- 169d. H. Philipp, M. Tate, S. Gruner (2011). Single-Photon Thresholding for Low-flux Measurements in Charge-Integrating Pixel Array Detectors. International Workshop on Radiation Imaging Detectors iWoRID, Zurich, Switzerland, July 3 – 7, 2011.
- 170d. B. Barstow, N. Ando, C. U. Kim, S. Gruner (2011). Direct correlation of protein structure and function by high-pressure X-ray crystallography. The 8th International Weber Symposium on Innovative Fluorescence Methodologies in Biochemistry and Medicine, “Weber Symposium”, Kauai, Hawaii, June 12 – 17, 2011.
- 171d. S. M. Gruner (2011). Science at the Hard X-ray Diffraction Limit. Institute of Materials Structure Science Symposium '11, Prospects of Quantum Beam Sciences at IMSS – Strongly Correlated Systems and Future ERL Sciences – EPOCHAL: Tsukuba International Congres Center, Tsukuba, Japan, December 6-7, 2011.
- 172d. D. Agyeman-Budu, A. Woll, K. Finkelstein, D. H. Bilderback, S. Gruner (2012). Microfabricated X-ray Optics at CHESS. CHESS Users' Meeting 2012, Robert Purcell Conf. Center, Cornell Univ., Ithaca, NY, June 5-6, 2012.
- 173d. J. Wierman (2012). A New Reduced Background Crystal Hydration Method for High Pressure Cryocooling. CHESS Users' Meeting 2012, Robert Purcell Conf. Center, Cornell Univ., Ithaca, NY, June 5-6, 2012

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- 174d. R. M. Baur, M. W. Tate, D. S. Dale, S. M. Gruner (2012). A High Spatial Resolution Area Detector with Fiber Optic Scintillator for High-energy X-ray Applications. CHESS Users' Meeting 2012, Robert Purcell Conf. Center, Cornell Univ., Ithaca, NY, June 5-6, 2012
- 175d. H. T. Philipp, K. S. Green, D. Chamberlain, M. W. Tate, P. Purohit, C. Strohman, S. M. Gruner (2012). Fast, High-dynamic-range, Low-noise, Tiled, Mixed-mode Pixel Array Detector (MMPAD). CHESS Users' Meeting 2012. Robert Purcell Conf. Center, Cornell Univ., Ithaca, NY June 5-6, 2012.
- 176d. M. S. Hromalik, K. S. Green, H. T. Philipp, M. W. Tate, S. M. Gruner (2012). The FPGA Pixel Array Detector. CHESS Users' Meeting 2012. Robert Purcell Conf. Center, Cornell Univ. Ithaca, NY June 5-6, 2012.
- 177d. C. U. Kim, M. W. Tate, S. M. Gruner (2012). Cryogenic Protein Dynamical Transition. CHESS Users' Meeting 2012. Robert Purcell Conf. Center, Cornell Univ., Ithaca, NY June 5-6, 2012.
- 178d. C. U. Kim, M. W. Tate, S. M. Gruner (2012). Water and Protein Dynamical Transition. CHESS Users' Meeting 2012. Robert Purcell Conf. Center, Cornell Univ. Ithaca, NY June 5-6, 2012.
- 179d. D. B. Zax, C. U. Kim, S. M. Gruner (2012). Probing Weird Phases of Water Via 2H NMR. Cornell High Energy Synchrotron Source (CHESS) and Macromolecular Diffraction Facility at CHESS.
- 180d. D.M. Szebeny, C. U. Kim, M. Cook, S. Gruner, I. Kriksunov, W. Miller, J. Wierman, R. Cerione (2012). Advances in Pressure Cryocooling at MacCHESS. Poster M-81 at American Crystallographic Association Annual Meeting, Boston, MA July 28-August 1, 2012.
- 181d. D. West, C. Kim, C. Tu, J. Gordon, A. Robbins, S. Gruner, D. Silverman, R. McKenna (2012). Structural and Kinetic Effects on Changes of Hydrophobicity in the CO₂ Binding Pocket of Human Carbonic Anhydrase II. Poster M-57 at American Crystallographic Association Annual Meeting, Boston, MA July 28-August 1, 2012.
- 182d. J. Wierman, C. Kim, S. Gruner (2012). A New Technique for Reducing Background Scattering in High Pressure Cryocooling. Poster M-70 at American Crystallographic Association Annual Meeting, Boston, MA July 28-August 1, 2012.
- 183d. C. U. Kim, M. W. Tate, S. M. Gruner (2012). Phase behavior of water and protein dynamics at cryogenic temperatures. 244th American Chemical Society National

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Meeting & Exposition. Materials for Health & Medicine Philadelphia, PA August 19-23, 2012.

- 184d. K. Giewekemeyer, S. S. Funari, D. J. Vine, K. S. Green, J. Wierman, H. T. Philipp, D. Chamberlain, P. Purohit, M. W. Tate, S. M. Gruner, J. Vila-Comamala, F. Uhlen, D. Nilsson, A. Holmberg, U. Vogt, and A. P. Mancuso (2012). Zone-plate based high-resolution Ptychographic Coherent X-ray Diffractive Imaging at 2-ID-B of the APS. 11th International Conference on X-ray Microscopy, August 5-10, Shanghai, China 2012.
- 185d. M. S. Hromalik, K. S. Green, H. T. Philipp, M. W. Tate, S. M. Gruner (2012). The FPGA Pixel Array Detector. New York Celebration of Women in Computing (NYCWIC) April 19-20, Albany, NY 2013.

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- 186d. C. U. Kim, M. W. Tate, S. M. Gruner (2012). Protein Dynamical Transition at Cryogenic Temperatures. 57th Annual Meeting Biophysical Society February 2-6, Philadelphia, PA 2013. *Biophys. J.*, **104**:223A-224A.
- 187d. J. Wierman, J. Alden, C. Kim, P. L. McEuen, S. M. Gruner (2013). Graphene as Protein Crystal Mounting Material to Reduce Background Scatter. 57th Annual Meeting Biophysical Society February 2-6, Philadelphia, PA 2013
- 188d. K. Giewekemeyer, A. Aquila, G. Borchers, R. N. Wilke, T. Salditt, C. Hackenberg, F. Stellato, R. Jordanova, M. Groves, V. Lamzin, H. T. Philipp, M. Tate, S. M. Gruner, A. Zozulya, M. Sprung, A. P. Mancuso (2013). Ptychography of frozen-hydrated biological cells. 11th International Conf. Biology and Synchrotron Radiation, September 8-11, Hamburg, Germany⁷
- 189d. K. Giewekemeyer, A. Aquila, G. Borchers, R. N. Wilke, T. Salditt, C. Hackenberg, F. Stellato, R. Jordanova, M. Groves, V. Lamzin, H. T. Philipp, M. Tate, S. M. Gruner, A. Zozulya, M. Sprung, A. P. Mancuso (2013). Ptychography of frozen-hydrated biological cells. 22nd International Congress on X-ray Optics and Microanalysis, September 2-6, Hamburg, Germany.
- 190d. K. Giewekemeyer, A. Aquila, G. Borchers, H. T. Philipp, S. M. Gruner, R. N. Wilke, T. Salditt, C. Hackenberg, R. Jordanova, M. R. Groves, V. Lamzin, F. Stellato, A. Zozulya, M. Sprung, A. P. Mancuso (2013). Ptychographic Coherent X-ray Diffractive Imaging of yeast cells and their nuclei. European XFEL Users' Meeting 2013-DESY Photon Science User's Meeting, January 23-25, Hamburg, Germany.
- 191d. M. Tate (2013). Integrating Pixel Array Detectors for Both High and Low Fluence Measurements. 17th Pan-American Synchrotron Radiation Instrumentation Conf. SRI2013, June 17-21, Gaithersburg, MD.
- 192d. H. T. Philipp, K. Ayyer, M. W. Tate, V. Elser, S. Gruner (2013). Reconstruction from Randomly Oriented Images Using Extremely Low-fluence Data. 17th Pan-American Synchrotron Radiation Instrumentation Conf. SRI2013, June, 17-21 Gaithersburg, MD.
- 193d. M. S. Hromalik, K. S. Green, H. T. Philipp, M. W. Tate, S. M. Gruner (2013). A Real-Time ACF Implementation for X-Ray Photon Correlation Spectroscopy using The FPGA Pixel Array Detector (2013). 17th Pan-American Synchrotron Radiation Instrumentation Conf. SRI2013, June 17-21, Gaithersburg, MD.
- 194d. H. T. Philipp, M. W. Tate, K. S. Green, J. Weiss, S. Gruner (2013). Improving Pixel Array Detectors Performance Through Data Analysis and Design. 17th Pan-American

Sol M. Gruner: Publications

- Synchrotron Radiation Instrumentation Conf. SRI2013, June 17-21, Gaithersburg, MD.
- 195d. K. S. Green, H. T. Philipp, D. Chamberlain, P. Purohit, M. W. Tate, S. M. Gruner (2013). Area detector development at Cornell. CHESS Users' Meeting, Robert Purcell Conf. Center, June 4-5, Cornell Univ., Ithaca, NY 14853.
- 196d. R. M. Baur, D. S. Dale, S. M. Gruner (2013). Artifacts in grating interferometry data. CHESS users' Meeting, Robert Purcell Conf. Center, June 4-5, Cornell Univ., Ithaca, NY 14853.
- 197d. C. U. Kim, M. W. Tate, S. M. Gruner (2013). Glass-to-liquid Transition of Water at Cryogenic Temperatures. CHESS Users' Meeting, Robert Purcell Conf. Center, Cornell Univ., June 4-5, Ithaca, NY 14853.
- 198d. D. Szebenyi, R. Cerione, M. Cook, R. Gillilan, S. Gruner, Q. Huang, C. U. Kim, I. Kriksunov, T. Lukk, W. Miller (2013). What's Cooking at MacCHESS: Recent Developments at a Synchrotron Source. American Crystallographic Association Annual Meeting, July 20-24, Honolulu, Hawaii.
- 199d. J. Wierman, J. Alden, P. McEuen, S. Gruner (2013). Graphene as a mounting material for protein crystals. American Crystallographic Association Annual Meeting, July 20-24, Honolulu, Hawaii.
- 200d. S. Gruner (2013). Novel Procedures to Obtain Structure from Microcrystals. American Crystallographic Association Annual Meeting, July 20-24, Honolulu, Hawaii.
- 201d. J. Kirchhoff, L. Zhou, M. Zhao, T. P. Weihs, T. c. Hufnagel, D. S. Dale, K. S. Green, H. T. Philipp, M. W. Tate, S. M. Gruner (2013). Millisecond angle-dispersive x-ray reflectivity of Ni/Al multilayers during rapid heating. 2012 MRS Fall Meeting & Exhibit, November 25 -30, Boston, Massachusetts.
- 202d. D. J. Thiel, S. E. Ealick, S. M. Gruner, E. F. Eikenberry (1996). Macromolecular Crystallographic Results Obtained Using the MacCHESS 2k x 2k CCD Detector. CHESS Users' Meeting, June 18 – 19, Cornell University, Ithaca, NY.
- 203d. K. Giewekemeyer, A. Aquila, R. N. Wilke, C. Hackenberg, G. Borchers, A. Zozula, M. Sprung, H. Philipp, R. Jordanova, M. Groves, V. Lamzin, M. Tate, K. Green, S. Gruner, F. Stellato, T. Salditt, A. P. Mancuso (2013). Standard test crystal for X-ray measurements, beamline calibration and teaching. 11th International Conference on

Sol M. Gruner: Publications

Biology and Sychrotron Radiation (BSR), Sept. 8 – 11, Grand Elysee Hotel Hamburg, Germany.

Sol M. Gruner: Publications***e. Group Publications (for which SMG is not a coauthor)***

- 1e. G.T. Reynolds (1990). Lyoluminescence. Tech. Report #3, DOE Contract DE-FG02-87ER60522-A000. (Dept. of Physics, Princeton University, Princeton, NJ 08544).
- 2e. M.W. Tate (1991). CCD based x-ray detectors. *Adv. in X-ray Analysis* 34: 357-362.
- 3e. L.M. Zeger (1989). The study of the L_{α} - H_{II} phase transition using monodomains. (Senior Thesis, Dept. of Physics, Princeton University).
- 4e. J.P. O'Brien (1989). A new method of mapping the temperature-water chemical potential phase diagram of phospholipids. (Senior Thesis, Dept. of Physics, Princeton University).
- 5e. J.A. Cerne (1990). High pressure studies using a diamond anvil cell. (Senior Thesis, Dept. of Physics, Princeton University).
- 6e. Joseph W. Strzalka (1991). Design and characterization of a capacitance-based dilatometer prototype (Senior Thesis, Princeton Elec. Engineering Dept.).
- 7e. Yumi Ijiri (1991). Studies on charged phospholipid-water phase behavior. (Senior Thesis, Dept. of Physics, Princeton University).
- 8e. George T. Reynolds (1991). Image intensification with color capability. *Appl. Optics* 30: 1366-1368.
- 9e. A.D. Polcyn (1992). A study of the effect of negative pressure on the H_{II} phase of the DOPE/Water system. (Senior thesis, Dept. of Physics, Princeton University).
- 10e. G.T. Reynolds (1992). Lyoluminescence. *J. Luminescence* 54: 43-69.
- 11e. Geo. T. Reynolds (1989). Thirty years of (image) intensified physics and biology, *SPIE* 1161: 104-124.
- 12e. D.A. Hajduk and G.T. Reynolds (1992). Luminescence from polymerization of acrylamide (abst.). *Bull. Amer. Soc.* 37: 510.
- 13e. J. A. Barry, H. Lamparski, E. Shyamsunder, F. Osterberg, J. Cerne, M. F. Brown and D. F. O'Brien (1992). ^{31}P NMR and x-ray diffraction study of the effect of photopolymerization on lipid polymorphism. *Biochem.* 31: 10114-10120.

Sol M. Gruner: Publications

- 14e. G. T. Reynolds (1993). Sources of low level light emission in laboratory and sea water. Tech. Report #5, DOE Contract DE-FG02-87ER60522-A000. (Dept. of Physics, Princeton University, Princeton, NJ 08544).
- 15e. E.F. Eikenberry, F. Osterberg, T.C. Irving, G. Cecchi, M.A. Bagni, C.C. Ashley and P.J. Griffiths (1994). Direct recording of time-resolved x-ray diffraction during tetanus rise of single muscle fibers using a CCD area detector (abstract). *Biophys. J.* 66: A191.
- 16e. E.F. Eikenberry, F. Osterberg, T.C. Irving, G. Cecchi, M.A. Bagni, C.C. Ashley and P.J. Griffiths (1995). Millisecond time-resolved lattice spacing measurements accompanying length changes during tetani in single muscle fibers (abstract). *Biophys. J.* 68: A68.
- 17e. M.D. McGehee (1994). Self-assembling mesoscopic surfactant/silicate materials. (Senior thesis, Dept. of Physics, Princeton University).
- 18e. Y-N Jun (1994). Magnetophoresis. (Senior thesis, Dept. of Physics, Princeton University.)
- 19e. Reynolds (1995). Life and light at hydrothermal vents. (Technical Report 6, DOE Grant DE-FG02-87ER60522-A000.)
- 20e. Y. Han (1995). Pressure and pH induced unfolding of staphylococcal nuclease. (Senior thesis. Dept. of Physics, Princeton University.)
- 21e. C.L. Van Dover, G.T. Reynolds, A.D. Chave, J.A. Tyson (1996). Light at deep-sea hydrothermal vents. *Geophysical Research Letters* 23 (16): 2049-2052.
- 22e. G.T. Reynolds (1997). Piezoluminescence from a ferroelectric polymer and quartz. (Technical Report 7, DOE Grant DE-FG02-87ER60522).
- 23e. J.D. Enlow, R.L. Enlow, K.M. McGrath, M.W. Tate (2004). Modeling liquid crystal bilayer structures with minimal surfaces. *Journal of Chemical Physics* 120 (4): 1981-1989.
- 24e. Mark W. Tate (2007). Recent advances in x-ray pixel detectors. (abstract) The 2007 Meeting of the American Crystallographic Association, Salt Lake City, Utah, July 21-26, 2007.
- 25e. J. Zhao, J. Wu, F. A. Heberle, T. T. Mills, P. Klawitter, G. Huang, G. Costanza, G. W. Feigensohn (2007). Phase studies of model biomembranes: Complex behavior of DSPC/DOPC/Cholesterol. *Biochimica et Biophysica Acta* 1768: 2764-2776.

Sol M. Gruner: Publications

- 26e. T. T. Mills, G. E. S. Toombes, S. Tristram-Nagle, D. M. Smilgies, G. W. Feigenson, J. F. Nagle (2008). Order Parameters and Areas in Fluid-Phase Oriented Lipid Membranes Using Wide Angle X-ray Scattering. *Biophysical Journal* 95 : 669-681.
- 27e. T. T. Mills, S. Tristram-Nagle, F. A. Heberle, N. F. Morales, J. Zhao, J. Wu, G. E. S., Toombes, J. F. Nagle, G. W. Feigenson (2008). Liquid-Liquid Domains in Bilayers Detected by Wide Angle X-ray Scattering. *Biophysical Journal*. 95 : 682-690.
- 28e. Edward J. W. Crossland, Marleen Kamperman, Mihaela Nedelcu, Caterina Ducati, Ulrich Wiesner, Detlef -M. Smilgies, Gilman E. S. Toombes, Marc A. Hillmyer, Sabine Ludwigs, Ullrich Steiner, and Henry J. Snaith (2009). A Bicontinuous Double Gyroid Hybrid Solar Cell. *Nano Letters*. 9: 2807-2812. (DOI: 10.1021/nl803174p).

Sol M. Gruner: Publications***f. PhD Theses Supervised***

- 1f. D.T. Barry (1979). Correlated x-ray diffraction analysis and electron microscopy of photoreceptor membranes (Princeton University, Dept. of Electrical Engineering & Computer Science).
- 2f. D.L. May (1982). Diamagnetic anisotropy as a structural probe for biological and synthetic polymers (Princeton University, Physics Dept.).
- 3f. B. Collett (1983). The passive mechanics of muscle: a preliminary structural study (supervised with Prof. J. Milch) (Princeton University, Physics Dept.).
- 4f. G. Kirk (1984). Thermodynamic models and experimental investigations of the lamellar ($L\alpha$) to inverse hexagonal (H_{II}) phase transition of lipid-water systems (Princeton University, Physics Dept.).
- 5f. D. Weise (1985). A panorama of uses for diamagnetic anisotropy in polymer science (Princeton University, Physics Dept.).
- 6f. M.W. Tate (1987). Equilibrium and kinetic states of the $L\alpha - H_{II}$ transition (Princeton University, Physics Dept.).
- 7f. D.C. Turner (1990). Structural investigations of the inverted hexagonal and inverted cubic phases in lipid-water systems (Princeton University, Physics Dept.).
- 8f. P.T.C. So (1992). High pressure effects on the mesophases of lipid-water systems (Princeton University, Physics Dept.).
- 9f. D.A. Hajduk (1994). Morphological Transitions in Block Copolymers (Princeton University, Physics Dept.).
- 10f. S.L. Keller (1995). Voltage-Clamp and X-ray Diffraction Studies of Alamethicin: A Window into Lipid-Protein Interactions (Princeton University, Physics Dept.).
- 11f. M.E. Wall (1996). Diffuse features in x-ray diffraction from protein crystals (Princeton University, Physics Dept.).
- 12f. F.H.O. Osterberg (1996). Induced changes in the diffuse x-ray scattering background from protein crystals (Princeton University, Physics Dept.).

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- 13f. P.E. Harper (1996). Structural studies of surfactant and polymer systems (Princeton University, Physics Dept.).
- 14f. S.L. Barna (1996). Development of a microsecond framing two-dimensional pixel array detector (PAD) for time-resolved x-ray diffraction (Princeton University, Physics Dept.).
- 15f. P.K. Urayama (2001). Techniques for high pressure macromolecular crystallography and the effects of pressure on the structure of sperm whale myoglobin (Princeton University, Physics Dept.).
- 16f. X. Li (2003). Studies of block copolymers in surface science and engineering nanotechnology (Cornell University, Dept. of Materials Science & Engineering). Co-advised with Prof. C. Ober.
- 17f. M.J. Renzi (2003). Pixel Array Detectors for ultra-fast time-resolved x-ray imaging. (Cornell University, School of Engineering & Applied Physics).
- 18f. A. Jain (2004). Self- and Co-Assembly of Polymer and Nanoparticle Building Blocks into Nanostructured Materials. (Cornell University, Dept. of Materials Science & Engineering). Co-advised with Prof. Uli Wiesner.
- 19f. M.D. Collins (2006). High-pressure x-ray crystallography and core hydrophobicity of T4 lysozymes. (Cornell University, Department of Physics).
- 20f. Qun Liu (2006). Structural studies of two enzymes and the method development for low resolution molecular replacement. (Primarily advised by Dr. Quan Hao; administratively advised only by Sol Gruner. Biophysics Field, Cornell University).
- 21f. Alper Ercan (2007). Development of a high frame rate x-ray imager. (Cornell University, School of Applied and Engineering Physics).
- 22f. Gilman Ewan Stephen Toombes (2007). Structural studies of block copolymer and block copolymer/aluminosilicate materials. (Cornell University, Department of Physics).
- 23f. Chae Un Kim (2007). High pressure cryocooling for macromolecular crystallography. (Cornell University, Field of Biophysics).
- 24f. Sterling Cornaby (2007). (Primarily advised by Dr. Don Bilderback; administratively advised only by Sol Gruner. Cornell University, Field of Applied Physics).
- 25f. Dan Schuette (2008). A mixed analog and digital pixel array detector for synchrotron x-ray imaging. (Cornell University, Dept. of Physics).

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- 26f. Nozomi Ando (2008). Biomolecules under high hydrostatic pressure. (Cornell University, Field of Physics)
- 27f. Buz Barstow (2009). Direct correlation of protein structure and function using high-pressure x-ray crystallography. (Cornell University, Field of Applied Physics).
- 28f. Lucas Koerner (2010). X-ray analog pixel array detector for single synchrotron bunch time-resolved imaging. (Cornell University, Department of Physics).
- 29f. Yi-Fan Chen (2012). Phase behavior of cardiolipin. (Cornell University, Field of Biophysics).
- 30f. Hiroki Sai (2013). Structural complexities in synthetic self-assembling nanomaterials. (Materials Science & Engineering Field, co-advised with Uli Wiesner)
- 31f. Robin Baur (2013). Development and application of a grating interferometer at the Cornell High Energy Synchrotron Source (Cornell University, Field of Physics).
- 32f. Kate Green (Physics field, In process)
- 33f. Jeney Weirman (Biophysics field, In process)

Sol M. Gruner: Publications***g. Post-Docs & Research Associates Supervised (year started)***

1g.	Richard Templer	(1986)
2g.	Erramilli Shyamsunder	(1986)
3g.	Mark Tate	(1987)
4g.	Manfred Kriechbaum	(1991)
5g.	James Gleeson	(1991)
6g.	John Shepherd	(1993)
7g.	Devora Perahia	(1995)
8g.	Kate McGrath	(1995)
9g.	Lois Pollack	(1997)
10g.	Guiseppe Rossi	(1997)
11g.	Achim Zirkel	(1997)
12g.	Karen Edler	(1997)
13g.	Adam Finnefrock	(1998)
14g.	Ivan Bazarov (W Prof. Maury Tigner)	(2000)
15g.	Peter Abbamonte	(2001)
16g.	Jochen Gutmann (w/Prof. Uli Wiesner)	(2001)
17g.	Pascale Chenevier	(2002)
18g.	Hugh Philipp	(2004)
19g.	Peter Busch (w/Prof. Chris Ober)	(2004)
20g.	Marianne Hromalik (nee Pouchet)	(2005)
21g.	Chae Un Kim	(2007)
22g.	Suntao Wang	(2009)

Sol M. Gruner: Publications***h. Patents***

- 1h. Sol M. Gruner & Gregory Kirk, [Encapsulated scintillators for measuring the concentration of tritiated solutes](#). US Pat. 4588698 - Filed Oct 19, 1982.
- 2h. Robert P. Lenk, Michael W. Fountain, Andrew S. Janoff, Mircea C. Popescu, Steven J. Weiss, Richard S. Ginsgurg, Marc J. Ostro & Sol M. Gruner, [Stable plurilamellar vesicles](#). US Pat. 5030453 - Filed Oct 12, 1984.
- 3h. Robert P. Lenk, Michael W. Fountain, Andrew S. Janoff, Mircea C. Popescu, Steven J. Weiss, Richard S. Ginsgurg, Marc J. Ostro & Sol M. Gruner, [Stable plurilamellar vesicles](#). US Pat. 5169637 - Filed Apr 2, 1991.
- 4h. Kathryn M. McGrath, Daniel M. Dabbs, Ilhan Aksay & Sol M. Gruner, [Lyotropic liquid crystalline L3 phase silicated nanoporous monolithic composites and their production](#). US Pat. 6638885 - Filed Apr 3, 2000.
- 5h. Chae Un Kim & Sol M. Gruner, Pressure cryocooling protein crystals. U.S. Patent 8030449.
- 6h. S. Gruner, D. Bernards, G. Malliaras, G. Toombes “Integration of Conducting Polymer Transistors with Ion Channels for Applications in Sensors” CCTEC D-3887 (new disclosure)

Sol M. Gruner: Publications***i. Undergraduate Theses Supervised***

- 1i. John O'Brien (1989). A new method of mapping the temperature – water potential phase diagram of phospholipids. Senior Thesis, Physics Department, Princeton University.
- 2i. Linda M. Zeger (1989). The study of the $L\alpha$ - H_{II} phase transition using monodomains. Senior Thesis, Physics Department, Princeton University.
- 3i. Joseph W. Stazalka (1991). Design and characterization of a capacitor-based dilatometer prototype. Independent Project, Department of Electrical Engineering, Princeton University.
- 4i. Yumi Ijiri (1991). Studies on charged phospholipid-water phase behaviors. Senior Thesis, Physics Department, Princeton University.
- 5i. Adam Daniel Polcyn (1992). A study of the negative pressure on the H_{II} phase of the DOPE/water system. Senior Thesis, Physics Department, Princeton University.
- 6i. Micahel D. McGehee (1994). Self-assembling mesoscopic surfactant/silicate materials. Senior Thesis, Physics Department, Princeton University. Co-advised with I. Aksay.
- 7i. Yuqi Han (1995). Pressure and pH unfolding of staphylococcal nuclease. Senior Thesis, Physics Department, Princeton University.
- 8i. Christian Haselgrove (1997). High pressure dilatometer for phase transitions in lipids and block copolymers. Senior Thesis, Physics Department, Princeton University.
- 9i. Edward Lloyd Hutchins (1999). The creation of a nanoporous polymeric film. Senior Thesis, Dept. of Materials Science & Engineering, Cornell University. Co-advised with C.K. Ober.
- 10i. Gideon Alon (2005). SAXS from block copolymers under oscillatory shear flow. Senior Thesis, Physics Department, Cornell University.
- 11i. Thomas Caswell (2007). Study and testing of a Pixel Array Detector for scanning transmission electron microscopy. Senior Thesis, Physics Department, Cornell University. Co-advised with D. Muller.
- 12i. Elizabeth C. Landrum (2008). A study of the effects of pressure on protein crystals. Senior Thesis, Physics Department, Cornell University.