

**Dr. Walter S. Lynn**  
**Geophysicist**  
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***EMPLOYMENT HISTORY:***

**Chief Operating Officer - Lynn Inc.** 10/02 – present  
Specializing in multi-dimensional (i.e. multi-component, multi-azimuth and time-lapse) 3-D seismic acquisition, processing and interpretation, depth imaging, project management and management consulting. Further details given below.

**Sr. Vice President, Technical Marketing – Petroleum Geo-Services** 7/99 – 10/02  
Responsible for packaging and presenting all PGS technical products, services and strategies. Target audiences from lay-level to research scientists.

**President – Society of Exploration Geophysicists** 9/01 – 10/02  
The SEG is an 19,000+ international-member organization. Traveled extensively worldwide representing the society, working with regional society affiliates, student sections, and other geo-science societies. Grew number of student sections by 10% (99 to 110). Helped to develop SEG's web-based publications and learning programs.

**President-elect – Society of Exploration Geophysicists** 8/00 – 9/01  
Society of Exploration Geophysicists.  
Helped to create a new strategic plan for the SEG to guide the society into the 21'st century.

**President – PGS Tensor, Inc.** 7/94 – 6/99  
Responsible for overseeing PGS data processing worldwide. Company grew 65% per year in personnel and revenue from 1994 thru 1998. Growth required two major reorganizations. Additionally, the growth of the company put many people in supervisory and management positions for which they were not well prepared. I handled this with an aggressive supervisory, management and project management training effort.

**Executive Vice President Technology – PGS Tensor, Inc** 8/91 - 6/94  
(formerly Grant Tensor Geophysical Corporation)

Responsible for seismic data-processing and acquisition technology. Oversaw development of seismic data processing on massively parallel processors, high-end data processing in the field, and integration of several third-party software packages into PGS Tensor's processing system. Developed first commercial 3-D pre-stack depth migration system on parallel computers.

Walter Lynn, C.V.

1/91 - 7/91

**President – Lynn Inc.**

Consulting on seismic imaging, velocity estimation, modeling, and amplitude-vs.-offset research and software development, and geophysical training projects. Also served as Chief Financial Officer, installed and maintained corporate accounting and payroll on the computer.

**Project Manager, R&D – Western Geophysical Co.**

12/79 - 1/91

Designed and managed the development of seismic velocity and modeling software. Conducted numerous research projects related to seismic imaging and seismic-noise suppression techniques. Consulted with company and client personnel on problems and issues related with acquiring, processing, and interpreting reflection seismic data. R&D training liaison and frequent speaker at local and international exploration geophysics meetings.

**Graduate Research Assistant**

8/75 - 12/79

Dept. of Geophysics, Stanford University

Performed fundamental research in reflection seismology while working in the Stanford Exploration Project. Taught geophysical seminars to graduate students.

**Research Geophysicist,**

1976 (summer)

Exxon Production Research, Houston, TX.

**Graduate Research Assistant**

9/73-7/75

School of Oceanography, Geophysics Group Regon State University, Corvallis Oregon

**Computer programming and geophysical modeling** for the  
Geological Engineering Dept., Princeton University

6/71-6/73

***RECENT PROJECTS:***

- Occidental Qatar: Worked in processing and interpreting two offshore 3-D multi-component datasets. Wrote programs to compute azimuthal velocity, eta and AVO. Received and worked with over 200 volumes of seismic data including P-P, P-S travel times, amplitudes and associated attributes. The characterization and mapping of vertical aligned fractures that flow fluids was the number one objective for these surveys. Project was completed and delivered on time.
- Apache: Interpreted P-P and P-S data for an onshore survey in Canada to identify drilling targets. Project was urgent and was accomplished in 8 weeks.
- Devon Energy: Have worked on numerous wide azimuth P-P surveys with the goal of identifying the hydrocarbon potential and fracturing characteristics of gas-rich shales. We continue to provide this service to Devon Energy. Many sub-projects have included applied research and development to understand processing and interpretation issues. Have also worked with 2 multi-component P-S surveys acquired in a wide-azimuth mode. Nearly all this work is in conjunction with the geoscientists and reservoir engineers.

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- Several clients: Seismic attribute correlation with production and water. We use seismic attributes that represent rock strength (e.g. elastic inversion volumes), paleo-strain (e.g. curvature volumes) and unequal horizontal stress (azimuthal velocity and AVO) . We have developed methodologies using commercial and proprietary software to examine and correlate numerous (often nearly 150) attributes either individually or in combinations with production information. The methodology is honed to deliver useful results to reservoir engineers in a timely manner.

***EDUCATION:***

Ph.D. Geophysics, Stanford University, 1979  
M.S. Geophysics, Oregon State University, 1975  
A.B. Geology and Geophysics, Princeton University, 1973

***PROFESSIONAL AND HONOR SOCIETIES:***

Society of Exploration Geophysicists  
European Association of Geoscientists and Engineers  
Geophysical Society of Houston  
Australian Society of Exploration Geophysicists  
Sigma Xi  
Phi Kappa Phi

***PERSONAL:***

Married to Heloise B. Lynn (for 29 years)  
Children: Justin – 23 years old  
Everett – 20 years old

***REFERENCES:***

Available upon request

***AWARDS AND PROFESSIONAL SOCIETY RESPONSIBILITIES:***

Member of the Russian Academy of Natural Sciences, U.S. Section

President of the Society of Exploration Geophysicists, September, 2001 through October, 2002.

President-elect of the Society of Exploration Geophysicists, August 2000 through September, 2001.

Board of Trustees, Retina Research Foundation

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General Co-Chairman (with Mr. Pan Yuan of the China National Petroleum Corporation) of the SEG/CPS/EAGE Beijing '98 International Geophysical Conference and Exposition, June 1998.

Best Paper Award at the 1990 Canadian SEG Meeting for: Migration from irregular surfaces. This paper also won Best Paper Award at the 1989 Annual SEG Meeting (presented by my co-author, Craig Beasley).

Best Paper Award at the 1986 Pacific Coast SEG Meeting for: Experimental evidence of interference from other seismic crews.

U.S. Patent, Method for migrating seismic data, 1990, Beasley, C., Lynn, W., and Chambers, R., Patent Number 4,943,950.

Co-organizer (with Jeff Johnson, Amoco) of Migration: Fundamental Issues and Future Developments Workshop at the 52<sup>nd</sup> Annual SEG Meeting, Dallas, TX 1982.

Co-Technical Chairman (with Mike Schoenberger, Exxon) of the First Gulf Coast Exploration and Development Meeting and Exposition, Houston, TX, 1985.

Member, SEG Continuing Education Committee, 1988-1990; responsible for course development.

***RECENT PUBLICATIONS:***

Lynn, W., 2007, Uncertainty implications in azimuthal velocity analysis: 77<sup>th</sup> Annual Internat. Mtg., Soc. Expl. Geophys., Expanded Abstracts, Soc. Expl. Geophys.

***PUBLICATIONS (THROUGH 1994):***

Anderson, J., Thomas, C., Kat, H., and Lynn, W., 1994, Velocity and structural interpretation with 3D pre-stack depth migration, 56<sup>th</sup> Mtg. Eur. Assoc. Expl Geophys., Abstracts, Eur. Assoc. Expl. Geophys.

Lynn, W., MacKay, S., and Beasley, C.B., 1993, Efficient migration through complex water-bottom topography, *Geophysics*, **58**, 393-398.

Pan, N., Bellinger, C., and Lynn, W., 1993, Radial Projection 3D time migration - theory and case history, 55<sup>th</sup> Mtg. Eur. Assoc. Expl Geophys., Abstracts, Eur. Assoc. Expl. Geophys.

Cabrera, J. J., Perkins, W. T., Ratcliff, D. W. and Lynn, W., 1992, 3D prestack depth migration on a massively parallel computer: Implementation and case history: 54<sup>th</sup> Mtg. Eur. Assoc. Expl Geophys., Abstracts, Eur. Assoc. Expl. Geophys., 268-269.

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Cabrera, J., Perkins, W., Hagen, T., Ratcliffe, D. W. and Lynn, W., 1992, 3-D prestack depth migration: Implementation and case history: 62nd Annual Internat. Mtg., Soc. Expl. Geophys., Expanded Abstracts, Soc. Expl. Geophys., 948-951.

Pan, N., Perkins, W. T., French, W. S. and Lynn, W., 1992, Exact and efficient three-pass 3D time migration for vertically inhomogeneous media: 54th Mtg. Eur. Assoc. Expl Geophys., Abstracts, Eur. Assoc. Expl. Geophys., 282-283.

Pan, N., Perkins, W., Lynn, W. and French, W. S., 1992, Efficient 3-D filtering using projected 2-D true-dip sections: 62nd Annual Internat. Mtg., Soc. Expl. Geophys., Expanded Abstracts, Soc. Expl. Geophys., 1042-1045.

Beasley, C. and Lynn, W., 1992, The zero-velocity layer: Migration from irregular surfaces: Geophysics, **57**, 1435-1443.

Beasley, C., Lynn, W., Larner, K. and Nguyen, H., 1988, Cascaded frequency-wavenumber migration - removing the restrictions on depth-varying velocity: Geophysics, **53**, 881-893.

Lynn, W., Gonzalez, A., and MacKay, 1991, Where are the fault-plane reflections?, Expanded Abstracts, 61'st Annual SEG Meeting, Houston.

Gonzalez, A., Lynn, W., Robinson, W., 1991, Prestack frequency-wavenumber (f-k) migration in a transversely isotropic medium, Expanded Abstracts, 61'st Annual SEG Meeting, Houston.

Li, Z., Lynn, W., Chambers, R., Larner, K., and Abma, R., 1991, Enhancements to prestack f-k migration, Geophysics, v. 56, 27-40. Also published in 1987, Expanded Abstracts, 57'th Annual SEG Meeting, New Orleans, 734-736.

Lynn, W., MacKay, S., Beasley, C., 1990, Efficient migration through irregular water-bottom topography, Expanded Abstracts, 60'th Annual SEG Meeting, San Francisco, 1297-1300.

Beasley, C., and Lynn, W., 1989, Zero-velocity layer: migration from irregular surfaces, Expanded Abstracts, 59'th Annual SEG Meeting, Dallas, 1179-1183.

Larner, K., Beasley, C., and Lynn, W., 1989, In quest of the flank, Geophysics, v. 54, 701-717.

Lynn, W. and Larner, K., 1989, Effectiveness of wide marine source arrays, Geophysical Prospecting, v. 37, 181-207.

Beasley, C., and Lynn, W., Larner, K., and Nguyen, H. 1987, Extended Stolt f-k migration, Expanded Abstracts, 57'th Annual SEG Meeting, New Orleans, 551-553.

Beasley, C., Lynn, W., Lerner, K., and Nguyen, H., 1988, Cascaded f-k migration: removing the restrictions of depth-varying velocity, *Geophysics*, v. 53, 881-893.

Lynn, W., Doyle, M., Lerner K., and Marschall, R., 1987, Experimental investigation of interference from other seismic crews, *Geophysics*, v. 52, 1501-1524.

Doyle, M., Lynn, W., Marschall, R., and Lerner, K., 1985, A discussion of seismic acquisition specs: example of shot noise from other crews, *Expanded Abstracts, 55'th Annual SEG Meeting, Washington*, 530-532.

Lerner, K., Chambers, R. Yang, M., Lynn, W., and Wai., W., 1983, Coherent noise in marine seismic data, *Geophysics*, v. 48, 854-886.

Johnson, J. D. and Lynn, W. S., 1982, Research workshop 4 -- migration: Fundamental issues and future developments: 52nd Annual Internat. Mtg., Soc. Expl. Geophys., *Expanded Abstracts, Soc. Expl. Geophys., Session:RW.4*.

Lynn, W. and Claerbout, J., 1982, Velocity estimation in laterally varying media, *Geophysics*, v. 47, 884-897.

Blakely, R., and Lynn, W., 1977, Reversal transition widths and fast-spreading centers, *Earth and Planetary Science Letters*, v. 33, 321-330.

Detrick, R., and Lynn, W., 1975, The origin of high-amplitude magnetic anomalies at the intersection of the Juan de Fuca Ridge and the Blanco Fracture Zone, *Earth and Planetary Science Letters*, v. 26, 105-113.

Jordan, T., and Lynn W., 1974, A velocity model in the lower mantle, *Journal of Geophysical Research*, v. 79, 2679-2685.

Stanford Exploration Project Research Reports:

Lynn, W., 1979, Velocity estimation in laterally varying media, Ph. D. thesis, SEP 21.

Lynn, W., 1979, Two types of migrated time sections, SEP 16, 171-180.

Lynn, W., 1978, A stable lateral velocity estimation scheme, SEP 15, 39-56.

Lynn, W., 1978, RMS Velocity estimation in laterally varying media, SEP 14, 95-118.

Lynn, W., 1978, Migrated time and migrated depth sections, SEP 14, 87-94.

Claerbout, J. and Lynn, W., 1978, Retarded slant midpoint coordinates, SEP 14, 73-80.

Lynn, W., 1978, Seismic imaging principles, SEP 14, 5-12.

Lynn, W., 1977, Lateral velocity estimation from unstacked data, SEP 11, 45-60.

Lynn, W. 1977, Implementing f-k migration and diffraction, SEP 11, 9-28.

DaPrat, G. and Lynn, W., 1977, Migration examples using Fourier transforms, SEP 11, 29-40.

Lynn, W., 1976, The effect of discrete delta-x on wave migration accuracy, SEP 8, 70-95.