Phone: 917-612-8841
pimbley@maxwell-consulting.com

Joseph M. Pimbley

Principal, *Maxwell Consulting, LLC*, March 2010 - Present

Editor, *Journal of Derivatives*, September 2018 - Present

Available Expertise as a Consultant

- Review or Creation of Financial and Mathematical Models
  - Investigate existing models as "independent review" for a wide assortment of financial purposes: risk assessment or valuation of derivatives, structured products, and other investments; credit risk and credit rating models; economic capital calculations; portfolio risk/return calculations – OR build any of these models
  - Monte Carlo simulations; time series; statistical methods; probability distributions; cashflows; numerical solutions; robust data handling; stress tests
  - Independent review results will be reported in writing and in training of existing personnel with respect to model accuracy ranges and best practices
  - Models to be expressed in mathematical formulae, spreadsheets, appropriate language computer code, or any combination that is beneficial to the client
- Litigation Support
  - Review and analyze documents and facts for legal challenges relevant to derivative transactions, structured products (RMBS, CDOs, *et cetera*), municipal and corporate bonds, bond insurance, credit ratings, and securities trading
  - Collaborate with attorney legal team as a key financial expert and expert witness
- Trading and Trading Markets and Platforms
  - Serve as expert regarding the technology and intellectual property for electronic trading on exchanges of equities and equity options and the electronic transmission of orders and quotes for these instruments
  - Serve as expert in product development for equity volatility indices such as VIX derived from electronic trades, quotes, and orders
- Executive Review of Existing Firm Risk Management
  - Investigate structure, personnel, reporting, and fundamental principles
  - Document findings, explain key concepts, identify improvements and safeguards
- Build and Establish Firm Risk Management
  - With input from Management and the Board, design architecture for new Risk Management function with respect to structure, personnel requirements, key risk measurement attributes, IT systems, and risk communication protocol
  - Execute this plan with existing or new personnel
- Advisory Review of Investment Policies and Execution
  - Independent review of policies and their execution for the financial management of endowments and other portfolios of non-finanical entities (such as colleges/universities, insurance companies, corporate Treasuries, and non-profits)
  - Ensure that the execution is consistent with stated goals and that the Board of the organization and all staff are fully aware of both the goals and execution
- Training
  - Conduct formal or informal training sessions for wide range of financial topics (such as risk management theory and practice, complex valuation, credit analysis for corporate, municipal, and structured securities, *et cetera*)
  - Customized by topic and level of detail as the client desires

Education

Ph.D. (Theoretical Physics) *Rensselaer Polytechnic Institute*, 1985
M.S. (Physics) *Rensselaer Polytechnic Institute*, 1981
B.S. (Physics) *Rensselaer Polytechnic Institute*, 1980
(*summa cum laude* and minor in Mathematics)

Board Positions

Editorial Board of *Risk Professional*, 2003 - 2018
Global Association of Risk Professionals

Board of Directors, 2013 - 2021
Solve Advisors, Inc.

Board of Directors, 2015 - 2020
Loud-Hailer, Inc.

Past Professional Experience

January 2021 – June 2021

Derivatives Strategist of *777 Partners, LLC*, a private equity firm. Responsible for creation of asset-backed security (ABS) transactions and the associated structuring, quantitative modeling, and credit rating agency relations and negotiations. Asset types for securitization included guaranteed and life-contingent structured settlements and commission and litigation receivables.

June 2008 – March 2010

Managing Director within the Financial Engineering practice of *Duff & Phelps, LLC* – a worldwide financial consulting firm. Activities included direct contact with clients (hedge funds, private equity firms, financial institutions) and review of client activities to formulate and execute beneficial advisory projects. Special focus was on derivative transactions and structured products (RMBS, CDOs, CMBS, *et cetera*). **Leading role in the Lehman Brothers bankruptcy court Examiner investigation that yielded important findings for funding, leverage, collateral, liquidity, and valuation challenges that led to the bankruptcy.**

March 2002 – May 2008

Executive Vice President and **Head of Institutional Risk** of *ACA Capital Holdings* (ACA), a hybrid financial products and insurance company with risk positions and assets under management exceeding $90 billion. Reported to the CEO and to the Board of Directors. Responsible for firm-wide, enterprise risk management (ERM), quantitative modeling, information technology, and data integrity. Senior decision maker on Credit and Investment Committees for municipal bonds, structured bonds and products, bank loans, derivative transactions.

Created proprietary cash-flow and *Monte Carlo* simulation models of credit, interest rate, and derivative pricing and risk for CDO and Structured Credit transactions in *Visual Basic* and **C#**. Recruited and managed a team of quantitative finance professionals. Managed the Information Technology function and led the technical development of proprietary database systems for trading and risk management. Chief Risk Officer of *ACA Capital Partners I* (a "credit hedge fund") with oversight of investments, funding, risk assessment, and valuations.

July 1997 – February 2002

Senior Vice President and Credit Derivative Product Manager of *Sumitomo Mitsui Banking Corporation Capital Markets* (SMBC CM). Primary task was to lead the development of a business in credit derivatives. Duties included business development (products, distribution, *et cetera*), execution of trades, the construction of models (*Excel Visual Basic* and **C**/**C++** routines with market data feeds) for pricing and risk management, and creation of necessary trading and operational systems. Primary focus was on managing economic and regulatory capital for the parent bank's US and Asian corporate loan portfolio.

October 1995 - July 1997

Senior Risk Manager in the Capital Markets Services group of the *Financial Guaranty Insurance Company*. Responsible for all risks (market, credit, liquidity, operational, *et cetera*) in the firm's ($6 billion) financial services for municipalities (primarily guaranteed investment contracts and asset management). Managed the capital markets IT function. Helped conceive, launch, and obtain triple-**A** ratings for a new special-purpose vehicle.

May 1994 - October 1995

Senior Analyst in the *Structured Finance* group within the Corporate division of *Moody's Investors Service*. Primarily responsible for research in the credit and market risks of structured notes and credit derivatives. The results of such research include the development of new rating businesses (*e.g.*, individual security and mutual fund market risk ratings) as well as *Moody's*, industry, and academic publications. Also active in rating guaranteed investment contracts (GICs), collateralized bond/loan obligations and other special purpose vehicles.

February 1993 - May 1994

Assistant Vice President in the *Risk Analytics* Unit of Citicorp North America Global Finance. Had primary responsibility for the analysis and measurement of credit risk in all "non-standard" and "emerging market" derivative transactions originating in North America, Latin America, South America and Southeast Asia. Such transactions included derivatives on equities, equity indices, debt securities, single currency interest rate swaps, cross currency swaps, foreign exchange contracts and commodities. Also responsible for validating and generating pricing models for derivative instruments. Activities required extensive computer model development (**FORTRAN**, **C** and spreadsheet programming) and daily communication with traders and financial engineers.

January 1987 - February 1993

Assistant Professor in the Department of Mathematical Sciences of Rensselaer Polytechnic Institute. Conducted independent research in the mathematics and physics of operation of various semiconductor devices. Discovered (with a colleague) a novel, *superresolution* spectral estimation algorithm. Taught classes on the subjects of ordinary differential equations (graduate and undergraduate), advanced mathematical modeling (graduate), numerical computing (undergraduate), probability, statistics and calculus with symbolic computing.

June 1980 - January 1987

Staff Physicist at the General Electric Corporate Research and Development Center, Schenectady, New York. Directed and coordinated the fabrication of Charge-Injection Device (solid-state) imagers. Suggested and studied design and fabrication innovations to improve quantum yield and signal/noise ratio of these imaging devices and won a 1982 (General Electric) Dushman Award for this advanced development work. Successfully led the development of a radiation-hard, MOS fabrication process. Studied channel hot electron reliability in short-channel NMOS FETs and made new contributions to this field. Derived and solved numerically a new set of semiconductor device equations for more accurate modeling of device physics.

Books

Joe Pimbley and Laurel McDevitt, *Banking on Failure*, Maxwell Consulting, LLC, ISBN-10: 069227426X, 2014.

Joe Pimbley and Laurel McDevitt, *Simple Money*, 2nd Edition, Maxwell Consulting, LLC, ISBN-10: 0615864627, 2013.

J. M. Pimbley, M. Ghezzo, H. G. Parks and D. M. Brown, *Advanced CMOS Process Technology*, Academic Press, San Diego, 1989.

S. D. Silverstein and J. M. Pimbley, "The Minimum Free Energy Method of Spectral Estimation,"' chapter in *Advanced Signal Processing*, ed. S. Haykin, Prentice-Hall, 1991.

J. M. Pimbley, "Transistors"', chapter in *Magill's Survey of Science: Applied Science*, F. N. Magill, editor, Salem Press, Pasadena, **ISBN 0-89356-705-1**, 1993.

Finance Articles

(**Seventy-plus articles** written for financial professionals on a wide range of topics in the capital markets from 1994 to the present. This list is available upon request. Five recent articles are cited below.)

J. M. Pimbley, "Testing and Mapping an Empirical Exercise Boundary for the American Put Option," *J. Derivatives* **29**(1), 139-147, Fall 2021.

J. M. Pimbley, "Efficient Routines for CDO Loss Calculations", *J. Structured Finance* **26**(1), 29-43, Spring 2020.

J. M. Pimbley and G. Phillips, "The *Myer* Ruling and its Limitations," *Commercial Law Quaterly*, **34**(1), March-May 2020.

J. M. Pimbley, "Simple Correlated Binomial Portfolio Loss Distribution", *J. Structured Finance* **25**(2), 75-86, Summer 2019.

J. M. Pimbley, "T-Vasicek Credit Portfolio Loss Distribution", *J. Structured Finance* **24**(3), 65-78, Fall 2018.

Quant Perspectives

(Monthly column for the *Risk News & Resources* publication of the *Global Association of Risk Professionals*)

Finance Public Presentations

(**Seventy-plus public presentations** for financial professionals on a wide range of topics in the capital markets from 1994 to the present. This list is available upon request. Five recent presentations are cited below.)

F. J. Fabozzi, J. M. Pimbley, S. Kackar, S. Page, and S. Karnik, "Derivatives in Asset Management," invited panel discussion for *Portfolio Management Research* by *With Intelligence*, March 2022.

J. M. Pimbley and R. Chang, "Rapid Monte Carlo Simulation – Hands-On Learning," invited lecture for *GARP 18th Annual Risk Management* Convention, New York, March 2017; also Industry Webcast "Rapid Monte Carlo Simulation," May 2016.

J. M. Pimbley, "Mathematical Finance, Models, Simulation and Today's Pressing Problem", invited lecture for *INFORMS 2016*, Nashville, November 2016.

J. M. Pimbley and S. R. Lindo, "Flight Simulator for Banking," invited PRMIA Webcast, October 2015.

J. M. Pimbley, "Data, Models & Concepts for Quantitative Finance", GARP Webcast, August 2013 - includes autoregressive (AR) and other statistical time series analysis.

Journal Articles

(Nearly one hundred refereed articles in the fields of electrical, chemical, and nuclear engineering and semiconductor physics. This list is available upon request.)

PATENTS

J. M. Pimbley and H. R. Philipp, *Radiation Transmissive Electrode Structure*, **4,450,465**, May 1984.

C.-Y. Wei and J. M. Pimbley, *Extended Drain Concept for Reduced Hot Electron Effect*, **4,613,882**, September 1986.

R. D. Lillquist, J. M. Pimbley and T. L. Vogelsong, ***Vipervision*** *Composite Visible/Thermal Infrared Imaging System*, **4,679,068**, July 1987.

C.-Y. Wei and J. M. Pimbley, *Graded Extended Drain Concept for Reduced Hot Electron Effect I*, **4,680,603**, July 1987.

J. M. Pimbley, G. Gildenblat, C.-Y. Wei and J. Shappir, *Hybrid Extended Drain Concept for Reduced Hot Electron Effect*, **4,691,433**, September 1987.

C.-Y. Wei and J. M. Pimbley, *Graded Extended Drain Concept for Reduced Hot Electron Effect II*, **4,859,620**, August 1989.

Y. Nissan-Cohen, P. A. Frank, J. M. Pimbley, D. M. Brown, E. W. Balch, and K. J. Polasko, *Adjustable Windage Method and Mask for Correction of Proximity Effect in Submicron Photolithography*, **4,895,780**, January 1990.

J. M. Pimbley and D. M. Brown, *Metallization Method for VLSIC Fabrication*, current status unknown.

S. D. Silverstein and J. M. Pimbley, *Spectral Estimation Utilizing an Autocorrelation-Based Minimum Free Energy Method*, **4,982,150**, January 1991.

S. D. Silverstein and J. M. Pimbley, *Spectral Estimation Utilizing a Minimum Free Energy Method with Recursive Reflection Coefficients*, **5,068,597**, November 1991.

H. M. Rougeot and J. M. Pimbley, *Light Detector Scintillator Radioactive Image Pick-up Apparatus with Improved Light Collection*, **1993-203755**, August 1993.

D. M. Brown, M. Ghezzo and J. M. Pimbley, *Silicon Carbide MOSFET Integrated Circuit Devices*, current status unknown.

H. M. Rougeot and J. M. Pimbley, *Photodetector Scintillator Radiation Imager Having High Efficiency Light Collection*, **5,208,460**, May 1993.

R. F. Kwasnick and J. M. Pimbley, *Method of Locating Common Electrode Shorts in an Imager Assembly*, **5,463,322**, October 1995.

D. A. McDevitt-Pimbley and J. M. Pimbley, *Systems and Methods for Traffic Guidance Nodes and Traffic Navigating Entities*, **9,142,127**, September 2015.

D. A. McDevitt-Pimbley and J. M. Pimbley, *Systems and Methods for Traffic Guidance Nodes and Traffic Navigating Entities*, **9,478,130**, October 2016.

Society Memberships (Past and Present)

Editorial Board member of the *GARP Risk Professional*
Advisory Board of the Polytechnic Univ *Center for Finance & Technology*
Sigma Pi Sigma - National Physics Honor Society
(Senior Member) *Institute of Electrical and Electronic Engineers* (IEEE)
Sigma Xi (scientific research society)
IEEE *Election Devices Society*
Society for Industrial and Applied Mathematics (SIAM)
American Association for the Advancement of Science (AAAS)

Professional Activities and Honors

2014	Financial Risk Manager – Certified by the *Global Association of Risk Professionals*
1997	Passed the Series 7 and Series 63 General Securities Representative Examinations
1996	Member of the Polytechnic University Advisory Council of the Center for Technology & Financial Services
1991	Elected to *Senior Member* of the IEEE
1989 - 1992	Chairman of the *Annual Workshop on Mathematical Problems in Industry* at *Rensselaer Polytechnic Institute*
1988 - 1990	Chairman of the *Center for Integrated Electronics VLSI Seminar Series* at *Rensselaer Polytechnic Institute*
1986	(General Electric Research and Development Center) Dushman Award for "outstanding technical contributions" to the VLSI Program
1985	(*Rensselaer Polytechnic Institute*) Karen and Lester Gerhardt Prize awarded annually for the best Ph.D. thesis from the Schools of Science and Engineering
1985	(*Rensselaer Polytechnic Institute*) H. B. Huntington Prize awarded annually for the best research by a student in the Physics Department
1982	(General Electric Research and Development Center) Dushman Award for "outstanding technical contributions" to the CID Imager Program
1976	National Merit IBM Thomas J. Watson Scholarship
1976	New York State Regents Scholarship