<u>**Curriculum Vitae**</u>

Clifford V. Rossi

5113 Brooks Road, Woolford, Maryland 21677
Primary Phone: (301) 908-2536
Email: crossi@umd.edu

Educational Background

Ph.D. - *Cornell University* 1985, Financial Economics and Quantitative Methods

M.S. - *Cornell University* 1983, Financial Economics

B.A. - *University of Denver* (conferred) 1979, Economics and Public Affairs
The George Washington University (1975-1978)

Employment History

<u>University of Maryland, Robert H. Smith School of Business, Finance Department</u>

Director, Smith Enterprise Risk Consortium 6/1/2023 - present
Professor-of-the-Practice and Executive-In-Residence 7/2009 – present
Managing Director, Center for Financial Policy, 7/2009 – 8/2011

Highlights

- Founded Smith Enterprise Risk Consortium (SERC) and served as Director
    - Established Advisory Council with 25+ C-level members of Fortune 500 or equivalent companies and organizations including Google, Citigroup, Northrop Grumman, Freddie Mac, Moody's, AstraZeneca, Travelers Insurance, Sallie Mae, among others
    - Established revenue generation model including paid memberships in large part from personal industry connections
    - Generated multiple paid research projects, personally conducted on behalf of SERC from such organizations as the Pew Charitable Trust, American Bankers Association and Boeing Employees Credit Union
    - Developed and participated in the SERC Risk Summit and Risk Academy (fee-based) programs
    - Established interdisciplinary SERC Academic Fellows program from departments in Smith and in other colleges (CMNS and School of Pharmacy)
    - Developed and participated in several SERC Executive Education training programs including AI and Risk, and Climate Finance and Risk

    - Created and contributed to SERC Risk Matters column for risk practitioners
    - Created and delivered SERC AI Risk webinar as well as an ABA AI and Risk webinar
    - Created and contributed to SERC Risk Leadership Webinar Series for risk practitioners
    - Created and deployed several industry tools including:
        - SERC Mortgage Natural Hazard Analyzer
        - SERC Mortgage Credit Risk Index (hosted on Mortgage Bankers Association website)
        - SERC Bank Branch and Secured Asset Natural Hazard Analyzer
    - Created and participated in the Mortgage Risk Summit for C-level risk leaders of mortgage specializing companies now in its 10th year
    - Created a SERC Risk Analyst program for graduate and undergraduate students to directly participate in SERC analytics projects
- Oversaw and managed the implementation of the Center for Financial Policy and associated programming in its first two years
    - Led the effort to establish an industry CFP Advisory Council
    - Created and participated in several large (100+) CFP conferences on GSE reform and systemic risk
- Significant faculty contributor to numerous Executive Education programs
    - Designed and developed a partnership with American Bankers Association for annual training in risk management for their members that led to the ABA's Certified Enterprise Risk Professional (CERP) program that I helped design
    - Designed and developed a partnership with the Mortgage Bankers Association for an annual Advanced Risk Management training program that I delivered.
    - Designed and delivered a risk management training program for the Reserve Bank of India for C-level risk professionals of Indian banks
    - Designed and delivered a risk management program for the China Development Bank
    - Designed and participated in SERC Climate Finance & Risk online training program as well as custom training for Pew Charitable Trust
- Secured two funded research grants totaling nearly $500,000 from the FDA's Office of Pharmaceutical Quality on the risks and economics of leveraging advanced manufacturing technology for reshoring pharmaceutical production in the US and established the OPQ's first Enterprise Risk Management function and capabilities
- Special Government Employee, Member, FDA Advisory Committee, Pharmaceutical Science and Clinical Pharmacology, 2022-2023
- Interviewed hundreds of times for various newspapers, magazines, TV and radio programs including CNN Situation Room, C-SPAN Washington Journal, ABC News, Fox News, Wall Street Journal, Financial Times, Washington Post, USA Today, Baltimore Sun and others

- Written dozens of op-eds for high profile outlets on topical risk and financial policy issues over the years including The Hill, American Banker, HousingWire, Baltimore Sun and others
- Created and contributed to regular weekly and monthly columns over the years in several high-profile publications:
    - American Banker Risk Dr. column
    - HousingWire
    - Global Association of Risk Professional (GARP) Chief Risk Officer Outlook
- Conducted published research on a number of risk management topics on financial risk management, pharmaceutical risk management, and climate risk management (see list in a later section of this document)
- Regularly taught in MS Finance, Master of Quantitative Finance, Full-time, Part-time, and online MBA programs and undergraduate Computational Finance minor programs since 2009 with consistently strong survey results overall across all years
    - Developed and delivered new graduate level 2-course sequence in risk management resulting in the publication of my graduate textbook; *A Risk Professional's Survival Guide, Applied Best Practices in Risk Management* published by Wiley Finance, 2014.
    - Developed and delivered new graduate level course in financial engineering based on my experiential learning projects (ELPs)
    - Developed and delivered new interdisciplinary graduate level course on climate models and analytic tools co-taught with atmospheric science faculty from CMNS
    - Taught numerous courses over the years including Derivatives, Commercial Bank Management, Corporate Risk Management, Climate Models and Analytic Tools, and dozens of ELPs
    - Developed the Finance Department's first ELPs over 10 years ago have become highly successful programs for our students with major corporate sponsors on topics leveraging massive databases for highly complex statistical and AI analysis including:
        - Google and AI analysis of bank and fintech credit performance and ratings
        - Freddie Mac and Fannie Mae over multiple years on developing a stochastic mortgage valuation engine for pricing credit risk transfer securities (CRTs)
        - Capital One on counterparty risk measurement
        - Radian Mortgage Insurance on house price valuation
        - Citigroup on analyzing bank capital requirements for mortgages
        - Deloitte on automated underwriting models AI vs statistical model performance
    - Received Smith Distinguished Teaching Award 2018 and 2019
    - Instrumental in placing dozens of students into risk management positions at such institutions as Wells Fargo, Freddie Mac, Fannie Mae, Citigroup, Deloitte, Capital One, M&T Bank, Boeing ECU, Radian Mortgage Insurance, Goldman Sachs, JP Morgan, CIT Bank, AIG, among others

- Developed and oversaw approval through University of Maryland of a new MS Climate Finance and Risk Management
- Served on the University of Maryland Senate 2025-2026
- Served on the Smith Finance MS Curriculum Committee for 10 years
- Solicited numerous times by financial regulatory agencies on policy issues relating to mortgage and banking activities including:
    - Federal Housing Finance Agency on GSE reform and credit pricing
    - FDIC on risk-based deposit insurance and 2023 bank failures
    - Office of the Comptroller of the Currency on loan loss reserving
    - Federal Reserve on bank capital requirements
    - Office of Financial Research on systemic risk issues

<u>Citigroup and Citibank</u>

Citibank Managing Director, Chief Risk Officer, Consumer Lending Group
and Managing Director Global Consumer Risk Management 11/2007 – 7/2009

Highlights

- Oversaw risk for Citigroup's $300 billion portfolio of mortgages, home equity, auto and student loans during the 2008 financial crisis and led a team of 700 risk professionals
- Oversaw risk for Citigroup's global mortgage portfolio and led strategic risk management activities
- Led the first Supervisory Capital Assessment Program (SCAP), the industry's first stress test program for large banks
- Responsible for communicating SCAP results to regulators as a prerequisite for accessing TARP funding in 2008
- Served on the Executive Committee of the Conser Lending Division
- Responsible for overseeing valuation of credit portfolios for Citigroup M&A activity
- Responsible for establishing and approving Consumer Lending Division's loan loss reserve
- Served as Chair of Global Mortgage Risk Management Committee

<u>Washington Mutual</u> – (WaMu)

Senior Vice President, Chief Credit Officer, 2/2007 – 11/2007

Highlights

- Served as seniormost credit officer for WaMu, responsible for credit risk of a $300B+ portfolio of mortgages, credit cards, and commercial loans
- Management liaison to Board Credit and Finance Committee
- Introduced and enterprise-wide risk management infrastructure rating system for assessing WaMu's ability to manage risk
- Served as Chair of WaMu Credit Committee and Loan Review Committee

- Responsible for reviewing and approving WaMu's loan loss reserve
- Reviewed and approved large, structured transactions

<u>Countrywide Financial Corporation/Countrywide Bank</u>

Managing Director, Chief Risk Officer
Countrywide Bank, 8/2005 – 2/2007

Executive Vice President, Chief Credit Officer
Countrywide Bank, 2/2004 – 8/2005

Highlights
- Established an enterprise risk management department of 100+ risk professionals for credit, market, and operational risk
- Oversaw all risk of Countrywide Bank's activities including $100+B mortgage portfolio
- Designed a number of bank mortgage products and established risk management controls for these products
- Member of Countrywide Bank's Executive Committee
- Reviewed and approved bank's loan loss reserve including signing of Sarbanes-Oxley sub attestations
- Management liaison to Board Risk Management Committee
- Architect of bank's automated underwriting and mortgage valuation process
- First dual executive of Countrywide Financial and Countrywide Bank providing strategic guidance between parent and bank on risk management

<u>Freddie Mac</u>

Senior Director, Mortgage Analytics & Model Deployment, and Mortgage Credit Policy 1/98 – 2/2004, *Principal/Senior Economist*, 1/96 – 1/98

Highlights
- Member of the first team designing and developing industry's first automated underwriting system (AUS), Loan Prospector
- Designed and developed industry's first automated underwriting scorecards for the Federal Housing Administration (FHA) and Veterans Administration (VA)
- Responsible for overseeing Freddie Mac's Single-Family business credit policy
- Oversaw Freddie Mac Single-Family custom credit structuring program
- Responsible for creating Freddie Mac AUS credit cutoff policy
- Co-inventor for three structured finance product patents
    - <u>Risk-based reference pool capital reducing systems and methods</u>
    - Patent numbers**:** 8447688, 7996304, 7987137, 7792742

Office of Thrift Supervision (OTS)

Senior Financial Economist, (2/91 – 10/93 & 7/94 – 1/96)

Highlights

- Served as key resource during the S&L crisis for litigation and regulatory work
- For a major Supreme Court case on thrift goodwill, provided the first estimates of industry losses from the thrift crisis
- Conducted a wide variety of research on thrift profitability and cost structure

Fannie Mae

Financial Economist, (10/93 - 7/94)

Highlights

- Conducted research on seller performance effects for guarantee fee pricing models

Economic Research Service (ERS)/US Treasury Department Office of Domestic Finance

Senior Financial Economist, (10/85 - 2/91)

Highlights

- Conducted work on thrift profitability and cost structure
- Conducted research on tax effects of 1986 Tax Reform Act on rural banks and thrifts
- Conducted research on Brady Bonds related to the Latin American debt crisis of the 1980s.

Books Authored

A Risk Professional's Survival Guide, Applied Best Practices in Risk Management, John Wiley and Sons, 2014. ISBN 978-1-118-04595-4

Book Chapters Authored

Portfolio Risk Monitoring, chapter in *Handbook of Financial Risk Information*, Cambridge University Press, 2014.

Frameworks for Systemic Risk Monitoring, co-authored chapter in *Handbook of Financial Risk Information,* Cambridge University Press, 2014.

Reasons for Caution in Statistical Testing for Redlining, chapter in Fair Lending Analysis, A Compendium of Essays on the Use of Statistics, American Bankers Association, 1995.

Selected Refereed Journal Articles

A Comparative Investment Analysis of Batch Versus Continuous Pharmaceutical Manufacturing Technologies, *Journal of Pharmaceutical Innovation*, https://doi.org/10.1007/s12247-021-09612-y, 2022.

Assessing the Impact of Hurricane Frequency and Intensity on Mortgage Delinquency, *Journal of Risk Management in Financial Institutions*, Vol. 14, 4 426–442, 2021.

Risk-Adjusted Performance: Lessons from the Financial Crisis, *Journal of Structured Finance*, Summer 2011, Vol. 17, No. 2, pp. 28-35.

Toward Comprehensive GSE and Housing Finance Reform, *Journal of Business and Technology Law*, June 2011.

"Mortgage Banking Cost Structure: Resolving an Enigma," *Journal of Economics and Business,* April 1998.

"The Characteristics of Derivatives Users: An Analysis of the Thrift Industry," *Journal of Economics and Business*, 49:587-598, 1997.

"The Economics of Low-Income Mortgage Lending," *Journal of Financial Services Research,* 11:169-188, 1997.

"Statistical Evidence of Mortgage Redlining? A Cautionary Tale*," Journal of Real Estate Research*, 1995.

"Implications of FIRREA on Thrift Industry Cost Structure," *Journal of Financial Services Research*, 8:29-44, 1994.

Congressional Testimony

Before the Housing and Insurance Subcommittee of the House Financial Services Committee, The Current Mortgage Market: Undermining Housing Affordability with Politics, May 17, 2023.

Before the House Financial Services Subcommittee on Consumer Protection and Financial Institutions "Addressing Climate as a Systemic Risk: The Need to Build Resilience within Our Banking and Financial System," June 30, 2021.

Before the Subcommittee on Housing and Insurance of the Committee on Financial Services United States House of Representatives, "The Future of Housing in America: Oversight of the Federal Housing Administration - Part II", February 26, 2016.

Before the Subcommittee on Housing and Insurance of the Committee on Financial Services United States House of Representatives, "Sustainable Housing Finance: Perspectives on Reforming FHA," April 10, 2013.

Keynotes

American Bankers Association Risk Management Conference 2023 – Keynote Address.

American Bankers Association Risk Management Conference 2018 – Keynote Address.

American Bankers Association Risk Management Conference 2016 – Keynote Address.

Risks on the Horizon for Banking and Financial Services, Annual Cornell in Washington DC Predictions Dinner, 2016.

Radian Guaranty Sales Conference 2014 – Keynote Address.

Radian Board of Directors Dinner Keynote on risk management, 2013.

Federal Home Loan Bank of Boston Board of Directors Dinner Keynote on risk management, 2012.

Removing Barriers to Pathological Risk Behavior: The Art of Effective Communication, Association of Federal Enterprise Risk Managers, 2012.

Global Systemic Risk Regulation Since the Financial Crisis: A Framework for Understanding the Effectiveness, Impacts and Harmonization of Macroprudential Regulation, Joint Bretton Woods and Deloitte Symposium, 2012.

"Lessons in Mortgage Risk-taking: Implications for Mortgage Insurance and QRM," keynote presentation to Radian Guaranty Board of Directors, August 2011.

Invited Talks

Equifax Fallout: Where Do We Go from Here? Presentation to Women in Housing and Finance, 2017.

Navigating Risks in Banking and Financial Services, presentation requested of Smith's DAR to NYC finance alumni, 2016.

"From Distant Shores to the Chester River: Unraveling the Implications of Europe's Debt Crisis for Long-term Economic Prosperity", Washington College Lecture Series Presented by the Alex Brown Student Investment Program 2013.

Housing Finance Reform: 2013 and Beyond, Global Association of Risk Professionals Annual Conference, 2013.

Is Maturity Transformation the Devil's Work or Just Bedeviled?, Atlanta Federal Reserve Bank Conference on Financial Markets, 2012. Personal invitation by the Governor of the Atlanta Federal Reserve Bank.

Risk Governance, Cognitive Bias and Incentives, RiskMinds Risk Management Conference, 2012.

Government-sponsored Enterprises (GSE Reform) and Risk Retention: What's the Best Solution? Global Association of Risk Professionals Annual Conference, 2012.

"*A Crisis of Leadership: Lessons from the Financial Meltdown*", The J.C. Jones Seminar in American Business Management, Washington College, 2010.

"*Mortgage Banking Issues – A Banker's Perspective*," presentation to OCC National Bank Examiners Conference, 2008.

"*Integrated Risk Management: An Emerging Paradigm for Balance Sheet Management,*" presentation to FFIEC Capital Markets Specialists Symposium, 2008.

"*Best Practices in Managing Credit and Interest Rate Risk in a Residential Mortgage Portfolio*," presentation to OCC National Bank Examiners Conference, 2005.

"*Automated Underwriting of FHA Mortgages: Forging a Strategic Partnership Between Freddie Mac and FHA*," presentation at the Credit Scoring Control V Conference, University of Edinburgh Management School, Edinburgh, Scotland, 1997.

"*An Empirical Comparison of Linear Probability and Logit Models of Mortgage Default*," presentation at the Credit Scoring Control V Conference, University of Edinburgh Management School, Edinburgh, Scotland, 1997.

Non-Refereed Journal Articles

A Comparative Risk & Financial Analysis of Batch and Continuous Pharmaceutical Manufacturing Technologies: Implications for Strengthening U.S. Competitiveness and Supply Chains, CERSI White Paper, September 2021.

The Connection Between Hurricanes and Mortgage Default Risk, Global Association of Risk Professionals White Paper, September 2020.

Managing Mortgage Product Development Risk, Mortgage Bankers Association, Research in Housing America Special Report, September 2017.

Fostering a Culture of Risk Management in Your Organization, Mortgage Compliance Magazine, Fall 2016.

Global Systemic Risk Regulation Since the Financial Crisis: A Framework for Understanding the Effectiveness, Impacts and Harmonization of Macroprudential Regulation, White paper, Joint Bretton Woods and Deloitte Symposium, 2012.

Forging Best Practices in Risk Management, co-authored, Office of Financial Research Working Paper No. 2-2012

"Incentives, Behaviors and Cognitive Bias in the Risk Function", Global Association of Risk Professionals *Risk Professional Magazine*, April 2012.

Frameworks for Systemic Risk Monitoring, Pew Foundation Report, Conference Co-Organizer, 2011.

Procyclical versus Countercyclical Policy Effects on Financial Markets, Financial Services Roundtable, Cluff Fund Trustees White Paper, 2011.

Assessing the Impact of Proposed Fed Debit Interchange Fees, Financial Services Roundtable, Cluff Fund Trustees White Paper, 2010.

The Impact of Brokered Deposits on Bank Failure, Financial Services Roundtable, Cluff Fund Trustees, 2010.

Anatomy of Risk Management Practices in the Mortgage Industry: Lessons for the Future, Mortgage Bankers Association, Research in Housing America Special Report, September 2010.

"*Reasons for Caution in Statistical Testing for Redlining*," Fair Lending Analysis, A Compendium of Essays on the Use of Statistics, American Bankers Association, 1995.