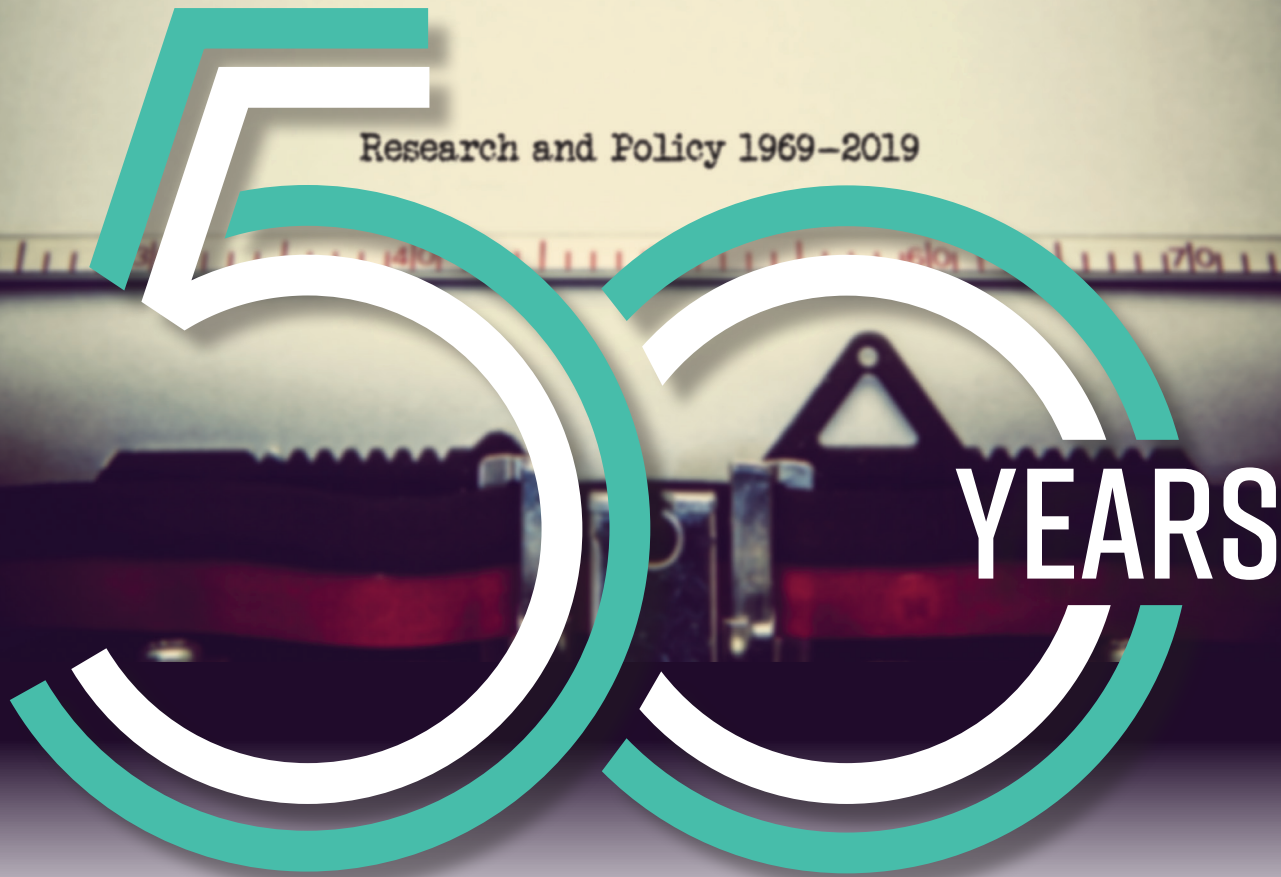


Research and Policy 1969–2019



# RESEARCH AND POLICY

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A Golden Minnesota Partnership



# RESEARCH AND POLICY: A GOLDEN MINNESOTA PARTNERSHIP


A CELEBRATION  
OF INTELLECTUAL  
INDEPENDENCE  
AND COLLEGIAL  
COOPERATION

Sound economic research is the bedrock of solid economic policy. Great research, in turn, is often inspired by confronting key policy issues in a supportive and independent environment. This conference honors an intellectual revolution galvanized by bringing these elements together a half century ago and launching a remarkable relationship between the Federal Reserve Bank of Minneapolis and the University of Minnesota. This alliance transformed how economists conduct research and how policy is made.

In a sense, it was modeled on the close bond between Walter Heller, the policy-oriented chair of the Council of Economic Advisers under President John F. Kennedy, and Leonid Hurwicz, the brilliant theoretician and future Nobel laureate. They built the University's world-class economics department that joined with Fed policymakers in the late 1960s to develop better forecasting models, an effort soon usurped by the then-radical theory of rational expectations.

What followed were research and policy ranging from time consistency to early childhood education, from sovereign debt to distributional inequality, from real business cycles to too big to fail. And, along the way, improvements in forecasting—the spark that began it all.

We've convened to review lessons learned over the past 50 years about successful policy-academia collaboration and to explore current research that will shape the theory and practice of economics over the next 50 years. This is a celebration of all involved, past and present, and of the spirit of intellectual independence and collegial cooperation that lies at the heart of the partnership. Moreover, this event stands as a challenge and commitment to sustain and build upon an enduring foundation.



PATHBREAKING RESEARCH THAT  
CHANGED THE COURSE OF ECONOMIC  
SCHOLARSHIP AND POLICYMAKING, AND  
A PARTNERSHIP SUSTAINED THROUGH  
COMMITMENT TO SHARED PURPOSE

# REVOLUTION IN THE AIR

*The core of today's economic policy and scholarship was established here 50 years ago through a unique—and still vibrant—partnership*

ARTHUR J. ROLNICK  
MARK L. J. WRIGHT  
FORMER AND CURRENT DIRECTORS OF RESEARCH  
FEDERAL RESERVE BANK OF MINNEAPOLIS

Revolution was in the air in the late 1960s, and the world of economics was not immune. Fault lines of prevailing theories and methods became apparent when prices rose, but growth slowed and jobs vanished. “Stagflation,” as some termed it, was a problem for which mainstream economists had no answer. If it had ever truly lived, their so-called Phillips curve trade-off of inflation and unemployment was dead or dying.

Out of this turmoil, a partnership was born. A small group of economists at the University of Minnesota and the Federal Reserve Bank of Minneapolis worked together on what they hoped would be a better macro model, a tool to improve policy. But inspired by a powerful idea in a colleague's paper, they tossed their effort aside and launched a new initiative.

The pathbreaking research that followed upended conventional models and changed the course of economic scholarship and policymaking. And the half century of collaboration that generated this revolutionary work is the reason we now gather.

## SEMINAL WORK

What were these breakthroughs? Here are a few of them.

The idea that people use relevant information and reasonably anticipate the economy's future course—that expectations about the future economy help shape that future—was established by partnership economists and introduced into Federal Open Market Committee deliberations by Minneapolis Fed leaders. The importance of using rules rather than discretion was illuminated by our scholars. The source of business cycles and caution about intervening to stop them was analyzed and advocated. We originated the study of too-big-to-fail bank policies and tirelessly warned about the moral hazard of implicit government insurance for financial institutions making risky investments. Partnership economists developed more advanced statistical forecasting techniques and theoretically deeper econometric models.

Our scholars have confronted some of the most intractable economic problems of our time and



A REMARKABLE FRACTION OF THE PARTNERSHIP'S  
SCHOLARSHIP HAS MOVED FROM RADICAL  
FRINGE TO CONVENTIONAL WISDOM, WINNING  
CONVERTS AND INTERNATIONAL AWARDS.

developed unfailingly powerful and often elegant solutions. Dramatic disparities in economic circumstance and opportunity are the focus of optimal taxation analysis by partnership economists and the Fed's early childhood development advocacy; they are central to the mission of the Opportunity & Inclusive Growth Institute, a recent Fed initiative. Recurrent sovereign debt crises that afflict nations around the globe are addressed by analyses and policy recommendations developed in Minneapolis. Underlying much of this work are the microfoundations of money—the very reasons for its existence; these too have been plumbed by our economists.

Our partnership is known for frontier research on scores of other topics—international trade theory,

technology transfer, exchange rates, labor unions, innovation and taxation, inflation and interest rates, human capital development, educational disparities, retirement financing, carbon pricing, urban structure, incarceration policies. The list continues—at last count, 588 staff reports, 759 working papers, and 38 volumes of the *Quarterly Review*. (Visit the Minneapolis Fed and Heller-Hurwicz Economics Institute websites.)

A notable feature of the partnership is how quickly these theoretical advances have been introduced into policy debates, their remarkably quick move to market, in a sense. This was possible only because scholars recognized that engagement in the polity improved their thinking and policymakers saw that insight from the academy shaped better policy. When central bankers talk today about anchoring

$$t) \left[ e^{\lambda \Delta} \sum_{s=1}^{(S-t)/\Delta} \Delta e^{-(e+\lambda)s\Delta} - R_{LBD}(t, \sigma \Delta) \right] - R_{ce}(t, \sigma \Delta)$$


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$$t) + \sigma_{\varepsilon}^2] + \sigma^2(t) \sum_{s=1}^{(S-t)/\Delta} \Delta e^{-es\Delta}$$

inflation expectations, for example, they're using theory developed here in Minneapolis over the past half century. Much of what policymakers now do and economists study is built on an intellectual foundation established by the University-Fed partnership.

### IDEAS AND IDEALS

Underlying all of this work is collaboration—that delicate art of listening and challenging, sharing and competing, supporting and testing—between two institutions with different yet allied missions—one of higher education and advanced scholarship and the other of economic vitality, stability, and well-being. This doesn't happen without generosity of spirit and financial support, nor is it sustained unless both partners remain committed to their shared purpose and to the missions of each.

A remarkable fraction of the partnership's scholarship has moved from radical fringe to conventional wisdom, winning converts and international awards. The world has evolved considerably in 50 years, yet the core of today's economic discourse was established long ago by scholars we may justly, and proudly, call our own.

But we do not rest on these laurels. Our glory days have not passed. The graduate students who shuttle between the University and the Fed are the future of this relationship, and that future is brilliant. They will refine theories and build more powerful methods. They will develop stronger models and better policies. And in ways we cannot begin to imagine, they will launch the next revolutions.

# DISTINGUISHED EVENING PANELISTS



**LARS PETER HANSEN**

DAVID ROCKEFELLER DISTINGUISHED SERVICE  
PROFESSOR  
UNIVERSITY OF CHICAGO

Lars Peter Hansen received the 2013 Nobel Prize in Economics, “for ... empirical analysis of asset prices,” with Eugene Fama, also at the University of Chicago, and Robert Shiller of Yale University.

Hansen, an expert in economic dynamics, has made fundamental advances in understanding how consumers, investors, and others cope with change and risk. His powerful generalized method of moments allows exploration of interconnection between macroeconomic indicators and financial assets. Recent work focuses on quantifying intertemporal risk-return trade-offs and modeling behavior in the context of uncertainty.

The recipient of the Erwin Plein Nemmers Prize in Economics in 2006 and the Frisch Medal in 1984, Hansen is a fellow of the National Academy of Sciences and the American Finance Association, a member of the American Academy of Arts and Sciences, and past president of the Econometric Society.

He holds a B.A. from Utah State University and a Ph.D. from the University of Minnesota. While studying at the University, he was a research assistant in 1978 to Thomas Sargent at the Federal Reserve Bank of Minneapolis.



**FINN E. KYDLAND**

JEFFREY HENLEY  
PROFESSOR OF ECONOMICS  
UNIVERSITY OF CALIFORNIA, SANTA BARBARA

Finn Kydland won the Nobel Prize in Economics in 2004, with Edward Prescott, “for their contributions to dynamic macroeconomics,” specifically for their analysis of the “driving forces behind business cycles” and for demonstrating that economic policies are often “time inconsistent”—varying in response to changing conditions—and that policy commitment via rules could achieve better outcomes.

Other work includes analysis of disparate effects of energy shocks on output and hours worked in relation to monetary policy and tax codes; the interrelationship of monetary policy, tax codes, and energy shocks; the mechanisms behind internationally synchronized inflation and short-term interest rates; and the role of fiscal sentiment in slowing recovery from the Great Recession.

A fellow of the Society for the Advancement of Economic Theory, the Norwegian Academy of Science and Letters, and the Econometric Society, Kydland received his B.A. from the Norwegian School of Economics and his Ph.D. from Carnegie Mellon University.

He taught at the University of Minnesota from 1976 to 1977 and again in 1989, and he was a visiting scholar at the Federal Reserve Bank of Minneapolis in 1988 and 1989.





## EDWARD C. PRESCOTT

REGENTS' PROFESSOR IN ECONOMICS  
W. P. CAREY SCHOOL OF BUSINESS  
ARIZONA STATE UNIVERSITY

Edward Prescott won the Nobel Prize in Economics in 2004, with Finn Kydland, “for their contributions to dynamic macroeconomics,” specifically for their analysis of the driving forces behind business cycles and for demonstrating that economic policies are often “time inconsistent”—varying in response to changing conditions—and that policy commitment via rules could achieve better outcomes.

His work has also focused on barriers to economic growth, financing retirement consumption as populations age, taxes and international variation in hours worked, and alternative monetary policy regimes.

He was awarded the 2015 Adam Smith Award from the National Association of Business Economists, the 2011 Society for the Advancement of Economic Theory Fellowship, and the 2002 Erwin Plein Nemmers Prize in Economics. He is a member of the National Academy of Sciences, the Econometric Society, and the American Academy of Arts and Sciences.

Before joining the W. P. Carey School of Business at ASU, Prescott taught at the Australian National University. He taught at the University of Minnesota from 1980 to 1998 and has been an adviser to the Federal Reserve Bank of Minneapolis since 1981. He received his B.A. from Swarthmore College, his M.A. from Case Western Reserve University, and his Ph.D. from Carnegie Mellon University.



## THE HELLER-HURWICZ ECONOMICS INSTITUTE

is a global initiative in the College of Liberal Arts at the University of Minnesota. Guided by the legacies of U of M economists Walter Heller and Leo Hurwicz, the Institute was created to inform and influence public policy by supporting and promoting frontier economic research and by communicating its findings to leading academics, policymakers, and business executives around the world.

[@HellerHurwicz](#)  
[cla.umn.edu/heller-hurwicz](http://cla.umn.edu/heller-hurwicz)



## THE FEDERAL RESERVE BANK OF MINNEAPOLIS

has a long tradition of groundbreaking research and policy insights. One of the 12 district Banks of the Federal Reserve System, which is the nation’s central bank, the Minneapolis Fed’s Ninth District spans from the Upper Peninsula of Michigan to Montana. Congress has given the Fed a dual mandate: promoting price stability and maximum employment.

[@MinneapolisFed](#)  
[minneapolisfed.org/research](http://minneapolisfed.org/research)





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## ARTHUR J. ROLNICK

SENIOR FELLOW, HUBERT H. HUMPHREY  
SCHOOL OF PUBLIC AFFAIRS  
UNIVERSITY OF MINNESOTA

Art Rolnick was instrumental in the evolution of the University-Fed partnership from its earliest days of informal cooperation to its current status as a world-renowned collaboration. His sustained guidance of joint research and policy initiatives was vital to the partnership's success.

Rolnick's research interests include banking and financial economics, monetary policy and history, and the economics of federalism. Early childhood development is a particular focus. His policy advocacy in this field has been recognized with awards from the George Lucas Education Foundation, the Minnesota Department of Health, and other institutions.

He is past president of the Minnesota Economic Association and serves on several nonprofit boards related to early childhood.

He holds a B.A. and M.A. from Wayne State University and a Ph.D. from the University of Minnesota. Rolnick joined the Federal Reserve Bank of Minneapolis as a senior economist in 1970 and served as a senior vice president and director of Research from 1985 to 2010. He began at the University of Minnesota in 1967 as a research associate; he is currently a senior fellow.

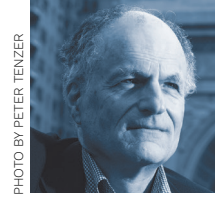


PHOTO BY PETER TENZER

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## THOMAS J. SARGENT

WILLIAM R. BERKLEY PROFESSOR  
OF ECONOMICS AND BUSINESS  
NEW YORK UNIVERSITY

Thomas Sargent won the 2011 Nobel Prize in Economics, with Princeton University's Christopher Sims, for "empirical research on cause and effect in the macroeconomy."

Sargent's work has focused on monetary and fiscal economics, including research documenting the importance of inflation expectations and fiscal policy for the conduct of monetary policy. Other research demonstrates that government policies and microeconomic risks have contributed to persistently high European unemployment and proposes ways to improve accounting for U.S. federal interest payments on government debt. His textbooks are indispensable guides to advanced theory and methods for graduate students internationally.

He is a senior fellow at the Hoover Institution, a member of both the National Academy of Sciences and the American Academy of Arts and Sciences, and past president of the Econometric Society and the American Economic Association. He won the Erwin Plein Nemmers Prize in Economics in 1997.

He received his B.A. from the University of California, Berkeley, and his Ph.D. from Harvard University. He taught at the University of Minnesota and was an adviser to the Federal Reserve Bank of Minneapolis from 1971 to 1987.



## CHRISTOPHER A. SIMS

JOHN J. F. SHERRERD '52 UNIVERSITY  
PROFESSOR OF ECONOMICS  
PRINCETON UNIVERSITY

Christopher Sims, winner of the 2011 Nobel Prize in Economics, is known for developing empirical tools to examine the relationship between policy and economics, including innovative forecasting methods. He shared the Nobel Prize with Thomas Sargent for “empirical research on cause and effect in the macroeconomy,” particularly his 1972 paper on money and income.

Other work has focused on the fiscal theory of the price level (the view that inflation is determined by fiscal stress) and on “rational inattention,” which suggests that price rigidity is due partly to limited human ability to process information.

He is a fellow of the Econometric Society, the American Academy of Arts and Sciences, and the National Academy of Sciences and is a past president of both the Econometric Society and the American Economic Association.

After earning his B.A. and Ph.D. from Harvard University, Sims taught at the University of Minnesota from 1970 to 1990, was a consultant at the Federal Reserve Bank of Minneapolis in 1983 and 1986-87, and directed the Institute for Empirical Macroeconomics in Minneapolis from 1987 to 1991.



## NANCY L. STOKEY

FREDERICK HENRY PRINCE DISTINGUISHED  
SERVICE PROFESSOR  
UNIVERSITY OF CHICAGO

Nancy Stokey has made fundamental contributions in areas ranging from microeconomics and monetary policy to economic theory and finance, with particular focus on economic dynamics.

Her work on recursive methods to analyze cost and benefit trade-offs across time periods is considered essential reading on the topic, and her analysis of information-based trade was deemed a “pillar of modern finance” by the American Economic Association. With co-authors, she pioneered application of rational expectations to pricing of durable goods. She has made important contributions to research on time consistency and monetary policy.

Stokey also has focused on strategic interdependence of investment incentives for technology and human capital, policy uncertainty as an impediment to investment, and sources and policy remedies for liquidity crises. She participated in the Copenhagen Consensus, an effort to systematically prioritize global challenges.

A fellow of the Econometric Society, the American Academy of Arts and Sciences, and the National Academy of Sciences and a distinguished fellow of the American Economic Association, she received her B.A. from the University of Pennsylvania and her Ph.D. from Harvard University. Stokey is a frequent visiting scholar at the Federal Reserve Bank of Minneapolis and contributor to its publications. She was a visiting professor at the University of Minnesota in 1983.



## ROBERT M. TOWNSEND

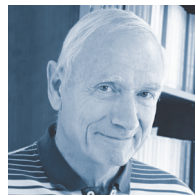
ELIZABETH & JAMES KILLIAN PROFESSOR  
OF ECONOMICS  
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Robert Townsend pioneered analysis of economic organization and financial systems through general equilibrium models, contract theory, and micro data. His research illuminates economic decision-making by households, communities, firms, and nations.

His work also has focused on financial systems in developing economies, using applied general equilibrium models and contract theory. His theoretical research has studied financial intermediaries in general equilibrium models, contract theory and mechanism design (creating rules to achieve specified outcomes), and financial institutions and economic growth. His econometrics research includes the study of risk and insurance in developing countries.

Since 1997, Townsend has undertaken large-scale village surveys in Thailand to analyze interaction between household decisions and community behavior.

He was awarded the Frisch Medal in 1998 and 2012 and is a fellow of the American Academy of Arts and Sciences and the Econometric Society. He received his B.A. from Duke University and his Ph.D. from the University of Minnesota, where he was a teaching assistant from 1972 to 1974. In 1974-75 and 1978-79, he was a visiting scholar at the Federal Reserve Bank of Minneapolis.



## NEIL WALLACE

PENNSYLVANIA STATE UNIVERSITY

Neil Wallace is one of the world's most respected monetary theoreticians. His scholarship includes foundational analyses of fiat money, research on banking and regulatory policy, fundamental work on rational expectations, and deep explorations of monetary policy, exchange rates, and other areas.

Wallace's contributions to the theory of rational expectations are among the most important in economics, but of equal significance is his exploration of the essence of money and banking. Though highly theoretical, his research is often of practical import; pioneering work on moral hazard in banking, for example, has helped shape U.S. policy on deposit insurance.

Among Wallace's essential research works are "Rational Expectations, the Optimal Monetary Instrument, and the Optimal Money Supply Rule," "Deposit Insurance and Bank Regulation: A Partial-Equilibrium Exposition," and "Optimal Money-Creation in 'Pure-Currency' Economies: A Conjecture."

He is a fellow of the Econometric Society and the American Academy of Arts and Sciences and a distinguished fellow of the American Economic Association. Wallace received his B.A. from Columbia University and his Ph.D. from the University of Chicago. He taught at the University of Minnesota from 1963 until 1994 and has been an adviser to the Federal Reserve Bank of Minneapolis since 1969.

# IN MEMORIAM

*We remember these contributors to the Golden Minnesota Partnership*

## **S. RAO AIYAGARI (1951-1997)**

*Professor, University of Rochester; Research Economist and Officer, Minneapolis Fed; Ph.D., University of Minnesota*

Important contributions in macroeconomics, monetary theory, and intertemporal general equilibrium theory, with papers on asset prices and returns, capital taxation, technology shocks, government debt, and the theory of money.

## **DAVID K. BACKUS (1953-2016)**

*Professor, New York University; Economist, Minneapolis Fed; Ph.D., Yale University*

Important contributions in international capital flows, business cycles and capital markets, fixed income and currency derivatives, and Asian and Latin American economic history, including work on international business cycle models, credibility and monetary policy, exchange rate behavior, and asset markets.

## **JOHN H. KAREKEN (1929-2016)**

*Professor, University of Minnesota; Special Monetary Adviser, Minneapolis Fed; Ph.D., Massachusetts Institute of Technology*

Important contributions in monetary policy, theories of money, exchange rates, and banking regulation. Papers with Neil Wallace on deposit insurance influenced U.S. law. Kareken formed and led the special studies group that was the seed of the University-Fed partnership.

## **PRESTON J. MILLER (1944-2017)**

*Vice President, Minneapolis Fed; Ph.D., University of Minnesota*

Important contributions in rational expectations, monetary policy, fiscal policy analysis, exchange rate regimes, and macroeconomic forecasting models, and commentaries on contemporary policy issues such as minimum wages, regulatory policy, payroll taxation, and homelessness.

## **BRUCE D. SMITH (1954-2002)**

*Professor, University of Texas, Austin; Consultant, Minneapolis Fed; Ph.D., Massachusetts Institute of Technology*

Important contributions in financial intermediation and development, growth theory, economic dynamics, and monetary history. More than 100 papers on topics including endogenous growth, financial repression, optimal currency areas, deposit insurance, monetary policy, and 19th century banking panics.

# SUPPORTING THE PARTNERSHIP

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## MINNEAPOLIS FED PRESIDENTS

2016-PRESENT

NEEL KASHKARI



2009-2015

NARAYANA KOCHERLAKOTA



1985-2009

GARY H. STERN



1980-1984

E. GERALD CORRIGAN



1977-1980

MARK H. WILLES



1971-1976

BRUCE K. MACLAURY



1965-1971

HUGH D. GALUSHA JR.



## A GOLDEN MINNESOTA PARTNERSHIP

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THIS CONFERENCE HONORS AN INTELLECTUAL  
REVOLUTION FORGED BY A REMARKABLE  
RELATIONSHIP BETWEEN THE FEDERAL  
RESERVE BANK OF MINNEAPOLIS AND THE  
UNIVERSITY OF MINNESOTA