• We have gathered to celebrate the scientific contributions and far-reaching influence of Milton Friedman.
• The power of his ideas can be gauged in different ways.
• The usual standard in academic circles would be to measure his influence by awards and continuing influence as gauged by citations to his work in academic articles.
• Another and perhaps more important measure is the influence of his ideas in the wider world and his contributions to understanding and improving the world.
• The two measures do not always agree. For Milton Friedman, they do.
• Why have his ideas persisted? Why do they inform current discussions of economic and social policy?
• He was certainly clever and highly creative. He had interesting things to say about a wide range of issues. (Example: His essay on why Jews who have benefited from capitalism often support anti-market movements is a great example of this point.)
• Friedman was an economic scientist. He thought of himself that way and even defined what that concept meant to him—and I will share that definition with you. He merged theory and evidence in his work and demanded of himself and others rigor in both theory and empirical work.
• He also addressed big questions - questions that were of major importance for economic and social policy.
• He did not engage in intellectual escapism.
• I contend his empirical methodology, his deep respect for facts and cultivation of facts, his willingness to consider a range of evidence, and his encouragement of the hard empirical work required to do empirical science, as well as his ability to synthesize and distill facts in a crystalline way and to engage critics in open debate and exchanges, are responsible for the enduring nature of his work.
“The ultimate goal of a positive science is the development of a “theory” or “hypothesis” that yields valid and meaningful (i.e., not truis-
tic) predictions about phenomena not yet observed. Such a theory is, in general, a complex intermixture of two elements. In part, it is a “language” designed to promote “systematic and organized methods of reasoning.” In part, it is a body of substantive hypotheses designed to abstract essential features of complex reality.”
—Friedman, 1953 (Methodology of Positive Economics)

“The ultimate goal of science in any field is a theory—an integrated “explanation” of observed phenomena that can be used to make valid predictions about phenomena not yet observed. Many kinds of work can contribute to this ultimate goal and are essential for its attainment: the collection of observations about the phenomena in question; the organization and arrangement of observations and the extraction of empirical generalizations from them; the development of improved methods of measuring or analyzing observations; the formulation of partial or complete theories to integrate existing evidence.”
—Friedman, 1950 (Wesley Clair Mitchell as an Economic Theorist)
There is of course no sharp line between the empirical scientist and the theorist. We are dealing with a continuum, with mixtures in all proportions, not with a dichotomy.

“The most reckless and treacherous of all theorists is he who professes to let facts and figures speak for themselves.”
—Marshall, 1885

And, one might add,

“The most reckless and treacherous of all empirical workers is he who formulates theories to explain observations that are the product of careless and inaccurate empirical work.”
—Friedman, 1950 (Wesley Clair Mitchell as an Economic Theorist)

- Distinguish between the transient—what is popular with mass appeal, the intellectual fads, and what gets into newspapers and makes for bestsellers—from what is enduring.

- What lasts—what is true science—and what addresses truly big questions.

- The video of an interview with his wife Rose. Interviewer asks Milton Friedman:
  - Interviewer: “What do you regard as your most important contributions?”
  - Rose Friedman (interjecting): “Your contributions to promoting liberty and human freedom.”
  - Milton Friedman (responding): “No, Rose, it’s my contributions to lasting scholarship—to economic science.”

- The hallmark of his work was long-term empirical research projects, carefully executed, that integrated economic theory and empirical work, and that confronted and digested a wide range of empirical evidence, using a variety of methods to sift and sort the evidence.
• Friedman long term projects:
  – Monetary History (1948-1982)
  – Consumption Fn. (1951-1957)

• Collected new data, created new theoretical frameworks, tackled important policy problems:
  (a) Effect of monetary policy on the economy.
  (b) Role of fiscal stabilizers and the multiplier, and the sources of economic development.

• Emphasis on rigor and deep understanding, and a self-critical posture that learned from his critics.

“You cannot be sure that you are right unless you understand the arguments against your views better than your opponents do.”
—Friedman 1974 (The Indispensable Milton Friedman)
• The methodology by which he reached his conclusions was as radical and far-reaching as the conclusions themselves.

• What were the ingredients of his successful approach to economic science?

I. Using economic theory to learn from and interpret data—and to revise the theory in the light of the data.

• Learning from data and revising theory in light of the data.

• A cumulative process of knowledge—hypothesis - confirmation or rejection - if rejection - new hypothesis, etc.

• No clear separation of the formulation of a model from tests of it.

The two stages of constructing hypotheses and testing their validity are related in two different respects. In the first place, the particular facts that enter at each stage are partly an accident of the collection of data and the knowledge of the particular investigator. The facts that serve as a test of the implications of a hypothesis might equally well have been among the raw material used to construct it, and conversely. In the second place, the process never begins from scratch; the so-called “initial stage” itself always involves comparison of the implications of an earlier set of hypotheses with observation; the contradiction of these implications is the stimulus to the construction of new hypotheses or revision of old ones. So the two methodologically distinct stages are always proceeding jointly.

—Methodology of Positive Economics (1953)

• For him the proper test of a theory was using new data or previously-unused features of current data to test the validity of any model or hypothesis.
• Found the Cowles Commission discussion of the identification problem problematic.

(a) Define models, and
(b) Isolate which (if any) are consistent with the data
(c) For him, an artificial process.

• Rejected the rigid separation of these two steps.

• Using partial equilibrium Marshallian tools—price theory—to organize and interpret evidence. For him, the most productive economic theory was Marshallian demand and supply theory, not Walrasian Theory or General Equilibrium theory.

• In response to an attack on his theoretical framework by Tobin (1974), JPE, Friedman wrote

> From a Marshallian approach theory is “an engine for the discovery of concrete truths.”

> From a Walrasian approach abstractness, generality, and mathematical elegance have in some measure become ends in themselves, criteria by which to judge economic theory.

—Milton Friedman, Comments on the Critics, JPE (1972)

• A theory should not be judged by the “realism” or “elegance” of its assumptions but by its power to predict phenomena.
• Passage in a penultimate version of “Methodology” is instructive.

“This fallacious notion on which I have placed so much emphasis, that hypotheses can be tested by the ‘realism’ of their assumptions independently of the accuracy of their predictions, has had far-reaching consequences in economics. The desire for descriptive realism which this belief so greatly strengthened indirectly fostered mathematical economics with its emphasis on Walrasian general equilibrium analysis as an escape from the ceteris paribus of partial equilibrium analysis: It explicitly motivated monopolistic competition analysis and explains its popularity. It encouraged emphasis on the arithmetical rather than the economic considerations in all branches of economic analysis. It was the battle cry of institutionalism and the closely related emphasis on extensive statistical studies of economic phenomena; it is a major source of the naive yet recurring notion that the progress of positive economics depends critically on the progress of psychology; it has been manifested most recently in the belief that a theory can be tested by asking questions of the consumers, producers and the like.”

—(Friedman, The Relevance of Economic Analysis to Prediction and Policy (1952))

• It led him to reject other tests of “realism”—intuitive, psychological, direct questioning.
• Friedman’s rejection of formalism or elegance as a goal in itself was not because he was a mathematical wimp.

• When deciding on going to graduate school, he chose between Chicago econ or Brown applied math.

• By mid-1930s had published major papers in statistics (Analysis of Variance of Ranks).

• Friedman who provided the specific example that motivated Wald’s *Sequential Analysis*, a version of dynamic programming.

• He was not at all averse to formal methods but asked that they be a vehicle for discovery and exploration to answer really big questions.
• Friedman often said that the questions addressed in a lifetime were usually formulated early in the adult intellectual life—as were the methods to address the questions.

• Useful, therefore, to look at early clues in his own lifetime.

Letter from E.B. Wilson to Milton Friedman.
(Wilson - an American Polymath)
November 24, 1946
Regarding Wilson’s favorable response to Friedman’s harsh review of Oscars Lange’s primarily theoretical book Price Flexibility and Employment (1944) for its errors in interpreting data and for its casual empiricism:

“Cleverness is highly admired even though meaningless.”
—E.B. Wilson, Letter from Wilson to Friedman, 1946

Wilson asked Friedman to suggest a list of the best scientific papers in economics—that applied the scientific method, that are examples of economic science.

Friedman lists the following:

1. W.C. Mitchell, Business Cycles (1913)
3. A.F. Burns, Production Trends in the United States (1934)
4. Jacob Viner, Canada’s Balance of International Indebtedness 1900-1913 (1924)
5. J.M. Clark, Studies in the Economics of Overhead Costs (1923)

6. M. Friedman and S. Kuznets, Income from Independent Professional Practice (1945), Chapters 3 and 4
Source: Letter to Wilson, November 24, 1946

He rejects Knight’s book *Risk Uncertainty and Profit*. Calls book “good and important” but “empirical observations are casual and unordered.”

Commenting on H. Schultz’s *The Theory and Measurement of Demand* (1938): extols its care and attempt to put empirical content into a pre-existing theory.

> Excluded because there is no reverse influence of the empirical work on the theoretical structure, Schultz took the theory as fixed and given and tried to measure what he thought were the essential functions in the theory. He imposed extremely high standards of care and thoroughness in the measurement process—but nowhere attempted what seems to me the fundamentally important task of reformulating the theory so it would generalize[ sic] the observable data; He always tried to wrench the data into a pre-existing theoretical scheme, no matter how much of a wrench was required.

Source: Letter to Wilson from Friedman

- I can find no direct response by Friedman to Koopman’s attack on Burns and Mitchell—*Measurement without Theory*
- It’s clear that his 1950 JPE paper ”Wesley Clair Mitchell as an Economic Theorist” was his response. He showed that Mitchell had a theoretical system that he used to interpret his evidence—even though he mingled the theory and evidence so closely that it was impossible to distill the theory. Friedman’s paper was an attempt to do that—to distill.
- His admiration for Mitchell and Burns and Mitchell is evident in his letter to Wilson. Yet, at the same time, his 1952 paper expressed dislike of institutionalism as much as formal theorizing for its own sake.
- My hypothesis is that Friedman walked a tightrope balancing the em-
piricism of the institutionalists with the demands of economic theory that *distilled* wisdom from the data and at the same time learned from the data. He never formalized his theory of learning from data—instead he gave two empirical examples of it (*The Theory of the Consumption Function* and *Monetary History*).

Bayesianism was too tight a straightjacket because it does not allow for the discovery of unanticipated events—new facts, leading to new theories.
What Makes Chicago Economics Distinctive?

- Friedman’s influence on the character of Chicago economics: he encouraged and practiced blunt talk with honest criticism and an emphasis on solving real world problems.

- Writing about his notion that economic theories are constructed for the purpose of explaining concrete problems in the “real world,” Friedman wrote about Chicago economics in his time:

  “There’s no doubt that Chicago was distinctive and has been ever since. The real distinction was not making price theory the focal point of the graduate curriculum. That isn’t the real distinction at all. The fundamental distinction is treating economics as a serious subject versus treating it as a branch of mathematics and treating it as a scientific subject as opposed to an aesthetic subject, if I might put it that way... The fundamental difference between Chicago at that time and let’s say, Harvard, was that at Chicago, economics was a serious subject to be used in discussing real problems and you could get some knowledge and some answers from it.”
—(Letter from Friedman to J. Daniel Hammond, 1992, as reported in Hammond, Theory and Measurement)

- Intellectual quality and not personal friendship and social niceties as a basis for departmental decision-making.

- He remarked in a 1974 talk to the university’s board of trustees:

  “If we are to preserve our heritage, we must continue to insist that intellectual quality and intellectual quality alone be the basis of appointments to the faculty... The objective pursuit of knowledge—to science in the broadest sense.
—(p 60-61, Milton Friedman : A Biography (2007), Ebenstein, Lanny)

- His desire for honest talk to foster quality.

Controversies among faculty members, mostly on an intellectual basis, helped to make the department an exciting place to study, preserved an atmosphere of a search for the truth, and developed the tradition that what mattered in intellectual discourse was only the cogency of an argument, not the diplomacy with which it was stated, or the seniority or professional standing of the person who stated it.

—(p 35 of Two Lucky People)
Three Ground Rules for Chicago Economics

The first ground rule is that its faculty know and understand the corpus of economic theory and economic empirical knowledge—not just their specialty within the field.

Students and faculty speak a common language—the language of basic price theory and the economics of incentives—and that we can communicate these ideas clearly.

The second ground rule is that it views economics as a serious subject, tackling serious problems.

Milton Friedman once described the seriousness of Chicago economics. He did not stay there, he wrote, “for the weather, but because his colleagues were engaged in the serious enterprise of understanding the world and not in getting their names quoted in newspapers.”

The third ground rule is that Chicago economics demands that scholars move beyond selective and self-serving appeals to “stylized facts” to “illustrate” theories and instead engages and promotes the serious scientific task of careful and creative analyses of data, linking theory and evidence. Chicago values the hard empirical work that produces convincing evidence and rigorous economic theorizing that produces lasting contributions to important problems.