Previous Baker Lectures from 1926 to Present

* Denotes Nobel Prize Laureates  
Underlined title denotes books published in the Baker Lecture Series

**Spring 2018**

New Frontiers in Organic Chemistry

Phil Baran  
The Scripps Research Institute  
*Translational Chemistry*

Jonathan Bennett  
Merck Research Laboratories  
*Cyclic Dinucleotide STING Agonists for Immuno-Oncology – Unlocking Therapeutic Potential through Chemistry*

Steven Leffler Buchwald  
Massachusetts Institute of Technology  
*Bond-Forming Processes of Molecules Large and Small*

Brett Fors  
Cornell University  
*Stimuli-Controlled Cationic Polymerization Reactions*

Marisa Kozlowski  
University of Pennsylvania  
*Oxygen Driven Fragment Coupling by Activation of C-H, N-H, and O-H Bonds*

Song Lin  
Cornell University  
*Using Electricity to Amp up Organic Synthesis*

Dean Toste  
University of California, Berkeley  
*Organic Chemistry Inspired by the Organometallic Chemistry of Gold*

**Spring 2017**

Quo Vadis: The Boundless Trajectories of Chemical Biology

Jon Clardy  
Harvard Medical School  
*Molecular View of Multilateral Symbioses*

Laura Kiessling  
University of Wisconsin/MIT  
*Mining Microbial Carbohydrates for Health and Disease*

Christopher Chang  
University of California, Berkeley  
*Transition Metal Signaling in the Brain and Beyond*

Alanna Schepartz  
Yale University  
*Watching Organelles for (Almost) Forever at Super-Resolution*

David Tirrell  
California Institute of Technology  
*What are Non-Canonical Amino Acids Good for?*
Spring 2016  
Kieron Burke  
University of California, Irvine  
*Successes and Failures of Density Functional Theory for Molecules and Materials*

Eran Rabani  
University of California, Berkeley  
*Multiexciton Generation at the Nanoscale*

Victor Batista  
Yale University  
*Studies of Natural and Artificial Photosynthesis*

Nandini Ananth  
Cornell University

Spring 2015  
The Places You Will Go - How Chemistry has Impacted My Life – Cornell and Beyond

Karen Trentelman  
The Getty Conservation Institute  
*Art as Evidence: The scientific investigation of works of art*

Frank Douglas  
the VAX Genetics Vaccine Co.  
*Introducing Chemical Biology for Drug Innovation in Industry*

Kirk Yeager  
FBI Chief Explosives Scientist  
*Poetic Justice through Hard Science*

Peter Kim  
Stanford University  
*Improving Human Health Through Translational Research*

Spring 2014  
Deciphering and harnessing nature's bioinorganic playbook for small molecule activation and catalysis

J. Martin Bollinger, Jr.  
Penn State University  
*Demystifying the chemical magic of non-heme-iron enzymes in natural product biosynthesis*

Andy Borovik  
UC Irvine  
*Synthetic chemistry as a window into metallobiochemistry*

Amy C. Rosenzweig  
Northwestern University  
*Metalloenzymes and biological methane oxidation*

William Tolman  
University of Minnesota  
*Copper oxygen intermediates relevant to oxidation catalysis*

Spring 2013  
Catalysis and synthesis at the frontier

John Hartwig  
University of California, Berkeley  
*Catalytic functionalization of arenes and alkanes*
Michael Krische  University of Texas at Austin
*Hydrogenation for C-C bond formation*

Scott Miller  Yale University
*Natural products, synthetic catalysts, unnatural products*

Matthew Truppo  Merck Research Laboratories
*A continuous biocatalytic manufacturing route for Januvia*

Spring 2012

Philip Ball  Freelance Writer, England
*Why water is a biomolecule*

Poul Petersen  Cornell University
*The behavior of water at interfaces*

Mark Johnson  Yale University
*Molecular perspectives of water from size-selected clusters*

Thomas Elsaesser  Max-Born-Institute, Berlin
*Ultrafast vibrational and structural dynamics of water and hydrated biomolecules*

Phillip Geissler  University of California, Berkeley
*Why would a small ion adsorb to the air-water interface?*

Veronica Vaida  University of Colorado, Boulder
*Water – air interfaces in the contemporary and ancient earth’s atmosphere*

Abraham Stroock  Cornell University
*Lessons from plants about water at negative pressures*

Franz Geiger  Northwestern University
*Exponential Sensitivities of Environmental Contaminant Interactions with Water/Mineral Interfaces*

Spring 2011

Klaus Müllen  MPI for Polymer Research, Mainz, Germany
*The Polymer Chemistry for Carbon Materials and Graphenes*

William Dichtel  Cornell University
*Graphene as a Platform for Molecular Assembly*

Byung-Hee Hong  Sungkyunkwan University, Suwon, Korea
Non-Covalent Surface Chemistry of Graphene

Jim Tour
Rice University

Graphene Synthesis and Applications

Jiwoong Park
Cornell University

New Eyes for Carbon Nanostructures

Mark Hersam
Northwestern University

Chemical Functionalization of Graphene

Philip Kim
Columbia University

Graphene at Extreme Charge Densities

Spring 2010

Frontiers in Protein Chemistry: From Structure and Reaction to Cellular Function

Jin Zhang
Johns Hopkins University School of Medicine

Spatiotemporal Regulation of Signaling Enzymes in Living Cells

Douglas Rees
Howard Hughes Medical Institute and California Institute of Technology

Structural Basis of Biological Nitrogen Fixation

Hening Lin
Cornell University

The Enzymatic Activity of Sirtuins: Beyond NAD-dependent Deacetylation

Lewis Cantley
Harvard Medical School

Cancer Cell Metabolism

Christopher Walsh
Harvard Medical School

Thiazolyl Peptide Antibiotics: A Bevy of Posttranslational Modifications

Amy Davidson
Purdue University

Structure and Function of an ATP Binding Cassette Transporter: The Maltose Transporter from E. coli

Jack Szostak
Harvard Medical School and Howard Hughes Medical Institute

Towards the Design and Synthesis of an Artificial Cell

Spring 2008

Various topics to be discussed by the speakers
Spring 2007
Gerhard Ertl* Fritz Haber Institute
Reactions at Solid Surfaces

George Whitesides Harvard University
Electron Transfer Across Self-Assembled Monolayers. The Development of a Junction Based on Sams Sandwiched Between Two Metal Electrodes One Gold or Silver and the Other Liquid Mercury—and the Use of these Systems to Study Mechanisms on Electron Transfer in Organic Materials.

Spring 2006
Robert Grubbs* California Institute of Technology
Synthesis of Large and Small Molecules using Transition Metal Catalysts

Fall 2004
Joanne Stubbe Massachusetts Institute of Technology
Radicals with Controlled Lifestyles

Fall 2003, Two Lecture Series
Harry B. Gray California Institute of Technology
The Currents of Life Electron Tunneling through Iron and Copper Proteins
Metalloprotein Folding Landscapes

Fall 2002
Jean-Michel Savéant University of Paris, Denis District
Elements of Molecular and Biomolecular Electrochemistry. An Approach to Electron Transfer Chemistry

Fall 2001
Jean Fréchet University of California at Berkeley
Design and Applications of Functional Macromolecules

Fall 2000
Stephen J. Lippard Massachusetts Institute of Technology
Principles of Bioinorganic Chemistry

Fall 1999
W. Carl Lineberger University of Colorado
Gas Phase Chemistry of Radicals, Anions, and Molecular Clusters

Fall 1998
John Brauman  Stanford University
Gas-Phase Ionic Chemistry

Fall 1997
Michael Fisher  University of Maryland
Understanding Criticality in Electrolytes and other Fluids

Spring 1997
Dieter Seebach  Eidgenössische Technische Hochschule, Zürich

Fall 1995
Graham Fleming  University of Chicago
Ultrafast Spectroscopy

Fall 1994
Gerhard Wegner  Max Planck Institute für Polymerforschung
Supramolecular Architectures of Polymers – Design and Properties

Fall 1993
John E. Bercaw  California Institute of Technology
Organotransition Metal Chemistry: Exploratory Synthesis and Mechanism

Fall 1992
Charles Cantor  Boston University
DNA Analysis from Genomes to Sequences Genomics

Fall 1991
R. A. Marcus*  California Institute of Technology
Theories of Electron Transfer and Unimolecular Processes and Comparison with Experiments

Fall 1990
R. Noyori*  Nagoya University
High-Performance Organometallic Reagents Asymmetric Catalysis
**Spring 1990**

John S. Waugh  Massachusetts Institute of Technology  
*Introduction to NMR*

**Spring 1988**

Richard H. Holm  Harvard University  
*Inorganic Chemistry Related to Biological Processes*

**Fall 1988**

Jeremy r. Knowles  Harvard University  
*Enzymes: Stereochemistry and Mechanisms*

**Spring 1987**

Allen J. Bard  University of Texas  
*Integrated Chemical Systems; Modified Electrodes and Photoelectrochemical Systems*

**Fall 1987**

Linus C. Pauling*  Linus Pauling Institute  
*The Nature of the Chemical Bond...After Fifty Years*

**Spring 1986**

Stuart A. Rice  University of Chicago  
*Intramolecular Dynamics*

**Fall 1984**

Alan R. Battersby  Cambridge University  
*Discovering the Chemistry of Nature’s Biosynthetic Pathways*

**Spring 1983**

John M. Thomas  Cambridge University  
*Technique and Adventure in Solid State Chemistry*

**Fall 1983**

Kurt Wüthrich*  Swiss Federal Institute of Technology, Zürich  
*NMR of Proteins and Nucleic Acids*

**Fall 1981**
Harry B. Gray  California Institute of Technology
Photochemistry of Metal Complexes

Fall 1980

Richard N. Zare  Stanford University
Angular Momentum Quantum Mechanics

Fall 1979

Charles A. Reilley  University of North Carolina
Diverse Aspects of Analytical Chemistry

Fall 1978

Jean-Marie Lehn*  Institute de Chemie, Universite Louis Pasteur de Strasbourg

Fall 1977

Gabor A. Somorjai  University of California at Berkeley
Chemistry in Two Dimensions: Surfaces

Fall 1976

Jack David Dunitz  Swiss Federal Institute of Technology, Zürich
X-ray Analysis and the Structure of Organic Molecules

Fall 1975

Duilio Arigoni  Swiss Federal Institute of Technology, Zürich
Bioorganic Stereochemistry

Fall 1974

Jack Lewis  Cambridge University
Organometallic Compounds – Reaction of Organic Molecules Coordinated to Metals

Fall 1973

Pierre Gilles de Gennes*  University of Paris
Liquid Crystals
Spring 1972

Michael Szware  State College of Forestry, Syracuse University
Electron Transfer Processes in Organic Chemistry

Fall 1972

Edgar Heilbronner  University of Basel
Photoelectron Spectroscopy and the Electronic Structure of Molecules

Spring 1971

Earl Leonard Muetterties  E. I.  du Pont de Nemours and Co.
Dynamic Stereochemistry

Fall 1970

Samuel Issac Weissman  Washington University, St. Louis, MO
Spectroscopy and Chemical Kinetics

Spring 1969

William N. Lipscomb, Jr.*  Harvard University
The Relation Between Atomic Structure and Function of Proteins

Fall 1969

Herbert Charles Brown*  Purdue University
Boranes in Organic Chemistry

Spring 1968

Ephraim Katchalski  Weizmann institute of Science
Synthetic Polymers of Biological Interest

Fall 1968

Gerhard Herzberg*  National Research Council
The Spectra and Structure of Simple Free Radicals

Fall 1967

Vladimir Prelog*  Swiss Federal Institute of Technology, Zürich
Chemical Topology
Spring 1965

Henry Taube* Stanford University
*Oxidation-Reduction Reactions in Solution and Related Topics

Fall 1965

George Simms Hammond California Institute of Technology
*Physical and Chemical Mechanisms in Photochemistry

Spring 1964

Hugh C. Longuet-Higgins Cambridge University
Current Developments in Valence Theory

Fall 1964

Frank H. Westheimer Harvard University
Mechanisms of Biochemical Reactions

Spring 1963

Edward A. Guggenheim Reading University
Applications of Statistical Mechanisms to Some Problems in Physical Chemistry

Fall 1962

Rolf Huisgen University of Munich
Organic Chemistry: Cycloadditions

Spring 1961

Peter Joseph William Debye* Cornell University
Molecular Forces

Fall 1961

Federick S. Dainton University of Leeds
Radiochemistry and Some Topics in Reaction Kinetics

Manfred Eigen* Max-Planck Inst. of Physical Chemistry
Physical Chemistry
Spring 1960

Robert Sanderson Mulliken* University of Chicago
The Interaction of Electron Donors and Acceptors

F. A. Kroger Philips Research Laboratories, The Netherlands
The Chemistry of Imperfect Solids

Spring 1959

Charles Alfred Coulson Mathematical Institute, Oxford
The Size and Shape of Molecules

Fall 1959

Rudolf Criegee Karlsruhe Institute of Technology
Organic Oxidation Mechanisms

Spring 1958

Ronald Percy Bell Balliol College, Oxford
The Proton in Chemistry

Fall 1958

Melvin Calvin* University of California, Berkeley
Recent Advances in the Chemistry of Photosynthesis

Spring 1957

Saul Winstein University of California, Los Angeles

Fall 1956

Harry Julius Emeleus Cambridge University
The Halogens and Their Components

Fall 1955

Paul Hugh Emmett Johns Hopkins University
Current Ideas on Contact Catalysts

Spring 1954

Ralph Kingsley Iler E. I. du Pont de Nemours & Co.
The Colloid Chemistry of Silica and Silicates
Fall 1954
Frederick Seitz  University of Illinois
*Imperfections in Crystalline Materials*

Spring 1953
Karl August Folkers  Merck & Company
*Current Research in Vitamin Chemistry*

Fall 1953
Edgar W. Richard Steacie  National Research Council Ottawa, Canada
*Photochemical and Free Radial Reactions*

Fall 1952
John Monteath Robertson  University of Glasgow
*Organic Crystals and Molecules*

Spring 1950
Nevil Vincent Sidgwick  Oxford University
H. I. Schlesinger  University of University of Chicago
*Hydrides of Boron*

Fall 1950
Christopher K. Ingold  University of College, London
*Structures and Mechanism in Organic Chemistry*

Spring 1949
Paul Doughty Bartlett  Harvard University

Spring 1948
Paul John Flory*  Goodyear Tire & Rubber Co.
*Principles of Polymer Chemistry*

- NO LECTURES WERE HELD DURING THE WORLD WAR II PERIOD (1940-47)

Fall 1939
Peter Joseph William Debye* Kaiser Wilhelm Institute

Determination of Molecular Structure by Method of Interferences

Fall 1938

Harold Clayton Urey* Columbia University

George Bogdan Kistiakowsky Harvard University

Ultra High Pressure

Percy William Bridgman* Harvard University

The Properties of Matter Under Pressure

Spring 1937

William Hobson Mills Cambridge University

Stereochemistry

Fall 1937

Linus Carl Pauling* California Institute of Technology

The Nature of the Chemical Bond and the Structure of Molecules and Crystals

Fall 1936

William Draper Harkins University of University of Chicago

The Chemistry and Physics of Surfaces

Spring 1935

Farrington Daniels University of Wisconsin at Madison

Chemical Kinetics

Fall 1935

Ross Aiken Gortner University of Minnesota

Selected Topics in Colloid Chemistry with Especial Reference to Biological Problems

Spring 1934

William Lawrence Bragg* Manchester University

Atomic Structure of Minerals

Summer 1934

Gilbert Newton Lewis University of California at Berkeley

Heavy Hydrogen
Fall 1934
Johan Rudolf Katz  The Netherlands

Spring 1933
Otto Hahn*  University of Berlin
Applied Radiochemistry

Spring 1932
Alfred E. Stock  Kaiser Wilhelm Institute
Hydrides of Boron and Silicon

Spring 1931
Nevil Vincent Sidgwick  Oxford University
Some Physical Properties of the Covalent Link in Chemistry

Fall 1931
Cecil Henry Desch  Sheffield University
The Chemistry of Solids

Spring 1930
Kasimir Fajans  University of Munich
Radioelements and Isotopes: Chemical Forces and Optical Properties of Substances

Fall 1930
Georg van Hevesy*  University of Freiburg
Chemical Analysis by X-rays and its Applications

Spring 1929
Frans Mauritz Jaegar  University of Groningen
Spatial Arrangement of Atomic Systems and Optical Activity: Methods, Results, and Problems of Precise Measurements at High Temperatures: The Constitution and Structure of Ultramarines

Fall 1929
George Paget Thomson*  University of Aberdeen
The Wave Mechanics of Free Electrons
Spring 1928

George Barger University of Edinburgh
*Some Applications of Organic Chemistry to Biology and Medicine*

Fall 1928

Hans Pringsheim University of Berlin
*The Chemistry of the Monosaccharides and of the Polysaccharides*

Spring 1927

Archibald Vivian Hill* University College, London
*Muscular Movement on Man: The Factors Governing Speed and Recovery from Fatigue*

Fall 1927

Paul Walden University of Rostock, Germany
*Salts, Acids, and Bases: Electrolytes: Stereochemistry*

Spring 1926

Ernst Julius Cohen University of Utrecht
*Physico-Chemical Metamorphosis and Some Problems in Piezochemistry*

Fall 1926

Friedrich Adolf Paneth University of Berlin
*Radio Elements as Indicators and other Topics in Inorganic Chemistry*

5/23/2018