Stem Cells
An Insider's Guide
by Paul Knoepfler (UC Davis)

*Stem Cells: An Insider's Guide* is an exciting new book that takes readers inside the world of stem cells guided by international stem cell expert, Dr. Paul Knoepfler. Stem cells are catalyzing a revolution in medicine. The book also tackles the exciting and hotly debated area of stem cell treatments that are capturing the public's imagination. In the future they may also transform how we age and reproduce. However, there are serious risks and ethical challenges, too. The author's goal with this insider's guide is to give readers the information needed to distinguish between the ubiquitous hype and legitimate hope found throughout the stem cell world. The book answers the most common questions that people have about stem cells. Can stem cells help my family with a serious medical problem such as Alzheimer's, Multiple Sclerosis, or Autism? Are such treatments safe? Can stem cells make me look younger or even literally stay physically young? These questions and many more are answered here.

A number of ethical issues related to stem cells that spark debates are discussed, including risky treatments, cloning and embryonic stem cells. The author breaks new ground in a number of ways such as by suggesting reforms to the FDA, providing a new theory of aging based on stem cells, and including a revolutionary Stem Cell Patient Bill of Rights. More generally, the book is your guide to where the stem cell field will be in the near future as well as a thoughtful perspective on how stem cell therapies will ultimately change your life and our world.

Time in Powers of Ten
Natural Phenomena and Their Timescales
by Gerard 't Hooft (Utrecht University, The Netherlands), Stefan Vandoren (Utrecht University, The Netherlands)
Translated by: Saskia Eisberg- 't Hooft

In this richly illustrated book, Nobel Laureate Gerard 't Hooft and Theoretical Physicist Stefan Vandoren describe the enormous diversity of natural phenomena that take place at different time scales.

In the tradition of the bestseller *Powers of Ten*, the authors zoom in and out in time, each step with a factor of ten. Starting from one second, time scales are enlarged until processes are reached that take much longer than the age of the universe. After the largest possible eternities, the reader is treated to the shortest and fastest phenomena known. Then the authors increase with powers of ten, until again the second is reached at the end of the book.

At each time scale, interesting natural phenomena occur, spread over all scientific disciplines: orbital and rotation periods of planets and stars, decay times of elementary particles and atoms, biological rhythms and evolution processes, but also the different geological time scales.
Uncertainty within Economic Models

by Lars Peter Hansen (University of Chicago, USA), Thomas J Sargent (New York University, USA & Hoover Institution, USA)

Written by Lars Peter Hansen (Nobel Laureate in Economics, 2013) and Thomas Sargent (Nobel Laureate in Economics, 2011), Uncertainty within Economic Models includes articles adapting and applying robust control theory to problems in economics and finance. This book extends rational expectations models by including agents who doubt their models and adopt precautionary decisions designed to protect themselves from adverse consequences of model misspecification. This behavior has consequences for what are ordinarily interpreted as market prices of risk, but big parts of which should actually be interpreted as market prices of model uncertainty. The chapters discuss ways of calibrating agents' fears of model misspecification in quantitative contexts.
Stem Cells
An Insider's Guide
by Paul Knoepfler (UC Davis)

Contents:
• Meet Your Stem Cells
• The Types of Stem Cells and Their Clinical Potential
• Stem Cell Treatments: Applications and Obstacles
• Stem Cell Models: Past, Present, and Future
• All in the Family: An Insider's Tale of Two Stem Cells and a Black Sheep
• Aging: The Stem Cell Connection
• Law and Order Stem Cells
• Stem Cells for Profit: An Ethical Spectrum
• Patient Bill of Rights and Guide to Stem Cell Treatments
• Are We There Yet? How Stem Cells Might Work to Treat Specific Diseases
• Stem Cell Cosmetics: More Than Skin Deep?
• Stem Cell Tests for Humanity
• Getting Your Stem Cell Geek On
• Conclusion: The Future of Stem Cells

Time in Powers of Ten
Natural Phenomena and Their Timescales
by Gerard 't Hooft (Utrecht University, The Netherlands), Stefan Vandoren (Utrecht University, The Netherlands)
Translated by: Saskia Eisberg-'t Hooft

Contents:
• Natural Phenomena and Their Timescales
  • $10^0 = 1$ (1 Second)
  • $10,000$ seconds = 2.78 hours
  • $10^{10}$ seconds = 317 years
  • $10^{16}$ seconds = 317 million years
  • The Dark Eternities $10^{32}$ seconds: to infinity and beyond Ernest Rutherford
  • $10^{-5}$ seconds = 10 microseconds
  • $10^{-2}$ seconds = 10 milliseconds = 0.01 seconds

World Scientific Series in Economic Theory – Vol. 6
Uncertainty within Economic Models
by Lars Peter Hansen (University of Chicago, USA), Thomas J Sargent (New York University, USA & Hoover Institution, USA)

Contents:
• Introduction
• Discounted Exponential Quadratic Gaussian Control
• Robust Permanent Income and Pricing
• A Quartet of Semigroups for Model Specification, Robustness, Prices of Risk, and Model Detection
• Robust Control and Model Uncertainty
• Robust Control and Model Misspecification
• Doubts or Variability?
• Robust Estimation and Control without Commitment
• Fragile Beliefs and the Price of Uncertainty
• Beliefs, Doubts and Learning: Valuing Macroeconomic Risk
• Three Types of Ambiguity
Stem Cells
An Insider's Guide
by Paul Knoepfler (UC Davis)

Readership: A wide range of readers: patients, scientists, biotech and big pharma people, students, investors, lawyers, employees of funding agencies such as the National Institute for Health (NIH) and the California stem cell agency, the US Food and Drug Administration (FDA), and researchers.

Time in Powers of Ten
Natural Phenomena and Their Timescales
by Gerard 't Hooft (Utrecht University, The Netherlands), Stefan Vandoren (Utrecht University, The Netherlands)
Translated by: Saskia Eisberg- 't Hooft

Readership: Science enthusiasts and students.

World Scientific Series in Economic Theory – Vol. 6
Uncertainty within Economic Models
by Lars Peter Hansen (University of Chicago, USA), Thomas J Sargent (New York University, USA & Hoover Institution, USA)

Readership: Graduate students; researchers and economists interested in Econometrics; Macroeconomics and Dynamic Programming.
List of Subject Classifications

Agricultural Sciences
- Animal Science
- Crop Science
- Fishery
- Forestry

Architecture/Building Management
- Architecture
- Building Management
- Design

Arts
- Anthropology
- Biography
- Culture Studies
- Current Events
- Literature
- Nature
- Philosophy
- Poetry
- Reference

Asian Studies
- Asian Business/Management
- Asian Culture/Literary Studies/Literature
- Asian Economies
- Asian History
- Asian Politics/Society
- China Studies
- Singapore Collection

Business and Management
- Corporate Governance
- Decision Sciences
- Entrepreneurship
- General Business and Management
- Innovation/Technology/Knowledge/Information Management
- International Trade/Business
- Marketing
- Operations Management/Operations Research/Supply Chain Management
- Organizational Behavior/Business/Industrial Organization

Chemistry
- Analytical Chemistry
- Biological Chemistry
- Catalyst Chemistry
- Computational Chemistry
- Electrochemistry
- Emulsion/Microemulsion Chemistry
- Environmental/Atmospheric Chemistry
- Fullerene Chemistry
- General Chemistry
- Industrial Chemistry
- Inorganic Chemistry
- Materials Chemistry/Nanochemistry
- Nuclear Chemistry
- Organic Chemistry
- Photochemistry
- Physical Chemistry
- Polymer Chemistry
- Solid State Chemistry
- Supramolecular Chemistry
- Surface/Interface Chemistry
- Theoretical Chemistry/Quantum Chemistry

Computer Science
- Artificial Intelligence/Machine Learning
- Databases/Information Sciences
- Digital Security
- Fuzzy Logic
- Innovation/Technology/Knowledge/Information Management
- Machine Perception/Computer Vision
Appendix D: Subject Classifications

Neural Networks/Networking
Pattern Recognition/Image Analysis
Robotics and Automated Systems
Software Engineering/Programming
Supercomputing/Parallel Computing
Theoretical Computer Science

Economics & Finance
Computational Economics/Finance
Corporate Finance
Developmental Economics
Environmental/Energy Economics
General Economics
Globalization
Health Economics
History of Economic Thought/Economic History
International Economics
International Finance
Macroeconomics/Microeconomics
Mathematical/Quantitative Finance
Mathematical Economics/Game Theory/Econometrics
Money & Banking/Investments/Financial Markets & Institutions
Political Economy

Education
Children's Books
Education Systems and Policies
General Education
K-12

Engineering
Acoustics
Aerospace Engineering
Biomedical Engineering
Chemical Engineering
Circuits & Systems
Civil Engineering
Communications
Computer Engineering
Control
Earthquake Engineering
Electrical & Electronic Engineering
Engineering Mechanics
General Engineering
Hydraulic Engineering
Industrial Engineering
Materials Engineering
Mechanical Engineering
Ocean Engineering/Coastal Engineering
Systems Engineering

Environmental Science
Biological Conservation & Preservation
Climate Change
Climatology/Meteorology
Energy Studies/Research
Environmental Education
Environmental Engineering
Environmental Management & Planning
Environmental Technology
Geology/Earth Studies/Earth Science
Hydrology
Natural Resource
Oceanography
Planetary Science
Pollution
Waste Management
Water Management

General
Chinese Publications
General Interest
General Science
History of Science
Popular Science
Appendix D: Subject Classifications

Life Sciences/Biology

- Animal/Plant Physiology
- Biochemistry/Biological Chemistry
- Bioengineering
- Bioinformatics/Biocomputing/Computational Biology
- Biomathematics
- Biomedical Sciences
- Biophysics
- Biostatistics
- Biotechnology
- Botany/Plant Biology
- Cancer Research
- Cell/Molecular Biology/Structural Biology
- Cognitive Science
- Ecology
- Evolution Biology
- Fish & Marine Biology
- General Life Sciences
- Genetics and Genomics
- Human Biology/Biological Anthropology/Primatology
- Microbiology/Virology Research
- Nanobiotechnology
- Natural Product Research
- Neurobiology/Neuroanatomy
- Psychology
- Stem Cells Research
- Tissue Engineering
- Zoology

Materials Science

- Amorphous Materials
- Biomaterials
- Ceramics
- Electron Microscopy, Scanning, Tunnelling
- General Materials Science
- Glasses, Insulators and Optical Materials
- Liquid Crystals & Crystallography
- Metallography
- Microelectronics
- New Materials
- Polymers
- Semiconductors & Related Areas
- Spectroscopy and Other Analytical Techniques
- Superconductivity & Magnetic Materials
- Surface Science
- Tribology

Mathematics

- Algebraic Geometry/Algebraic Topology
- Approximations and Expansions
- Associative & Nonassociative Rings and Algebra
- Calculus of Variations and Optimal Control/Optimization
- Category Theory/Homological Algebra
- Classical Mechanics 1: Mechanics of Particles and Systems
- Classical Mechanics 2: Mechanics of Deformable Solids
- Combinatorics
- Commutative Algebra
- Computer Mathematics and Science
- Difference and Functional Equations
- Dynamical Systems and Ergodic Theory
- Electromagnetism & Optics
- Fields and Rings
- Fluid Mechanics
- Functional Analysis
- Functions of a Complex Variable
- Functions of Several Complex Variables
- Game Theory
- General Applied Mathematics
- General Pure Mathematics
- Geometry (Convex and Discrete Geometry) and Topology
- Global Analysis/Analysis on Manifolds
- Group Theory and Generalizations
- Harmonic Analysis
- Information Theory
- Integral Equations
- Integral Transforms/Operational Calculus
- K-Theory
- Lattices/Ordered Algebraic Structures
- Linear and Multilinear Algebra/Matrix Theory
- Manifolds and Cell Complexes (Complex Manifolds)
- Mathematical Biology
- Mathematical Computation
- Mathematical Finance & Economics
- Mathematical Logic and Foundations
- Mathematical Modeling
- Mathematical Physics
- Mathematics Education
Appendix D: Subject Classifications

- Measure and Integration
- Number Theory
- Numerical Analysis
- Operations Research/Mathematical Programming
- Operator Theory
- Ordinary Differential Equations
- Partial Differential Equations

- Popular & Recreational Mathematics
- Potential Theory
- Probability Theory/Stochastic Processes
- Quantum Theory
- Real Functions
- Relativity & Gravitation

- Medicine
  - Alternative Medicine/Chinese Medicine
  - Anaesthesia
  - Anatomy
  - Aviation Medicine/Aeromedical Science
  - Cardiology
  - Clinical Biochemistry
  - Dentistry
  - Dermatology
  - Disease
  - Ear, Nose & Throat
  - Embryology
  - Endocrinology
  - Food Processing
  - Food Science & Technology
  - Forensic Medicine
  - Gastroenterology
  - General Healthcare
  - General Medicine
  - Geriatric Medicine/Gerontology
  - Haematology
  - HIV & AIDS Research
  - Human Physiology
  - Immunology
  - Infectious Diseases
  - Internal Medicine
  - Medical Education
  - Medical Law & Medical Ethics
  - Microbiology/Virology
  - Nanomedicine
  - Nephrology/Renal Medicine
  - Neurology/Neuroscience
  - Nuclear Medicine/Radiology/Medical Imaging
  - Nursing
  - Nutrition
  - Obstetrics & Gynaecology
  - Occupational & Community Medicine
  - Oncology
  - Ophthalmology
  - Orthopaedics (+Plastic Surgery)/Biomechanics
  - Paediatrics
  - Pathology
  - Pharmacology/Drug Discovery/Pharmaceuticals
  - Physiotherapy
  - Psychiatry
  - Public Health (+Epidemiology)
  - Respiratory Medicine/Pulmonary Medicine
  - Rheumatology
  - Social Medicine
  - Surgery
  - Toxicology
  - Tropical Medicine & Hygiene
  - Urology
  - Vascular Medicine

- Nanotechnology & Nanoscience
  - Atom Manipulation
  - Computational Nanoscience
  - General Nanoscience
  - Magnetic Properties of Nanostructures
  - MEMS/NEMS
  - Nanobiotechnology
  - Nanoelectronics
  - Nanofabrication and Nanomanipulation
  - Nanomaterials and Nanostructures
  - Nanomechanics
  - Nanomedicine
  - Nanophotonics
  - Nanotechnology in Energy and the Environment
  - Picotechnology

- Nonlinear Science, Chaos & Dynamical Systems
  - Complex Systems
Appendix D: Subject Classifications

Physics

- Applied and Technical Physics
- Astronomy, Astrophysics and Cosmology (including Geophysics)
- Atomic and Molecular Physics
- Biophysics, Biological and Medical Physics
- Classical Mechanics, Continuum Physics, Acoustics
- Computational, Mathematical and Theoretical Physics
- Condensed Matter Physics
- Electromagnetism and Plasma Physics
- General Physics (all aspects)
- General Physics (popular reading)
- Interdisciplinary Physics
- Nuclear Physics
- Optics and Laser Physics
- Particle Physics/High Energy Physics, Quantum Fields
- Quantum Mechanics and Quantum Information
- Relativity and Gravitation
- Statistical Physics, Complexity and Nonlinear Dynamical Systems (including Heat and Thermodynamics)

Social Sciences

- International Relations
- Maritime Studies
- Political Science/Policy Studies/Public Policy
- Security Studies/Terrorism
- Social Issues/Human Security
- Urban Planning