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TURN ON, TURN IN

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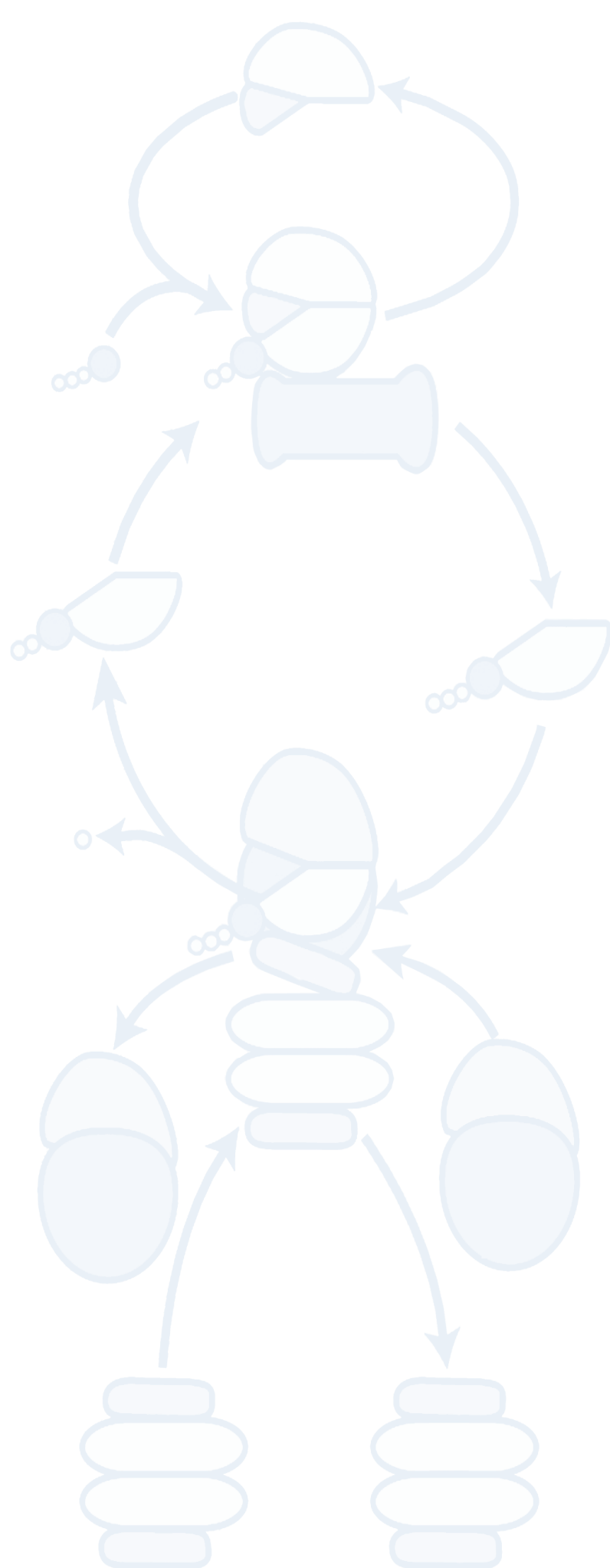
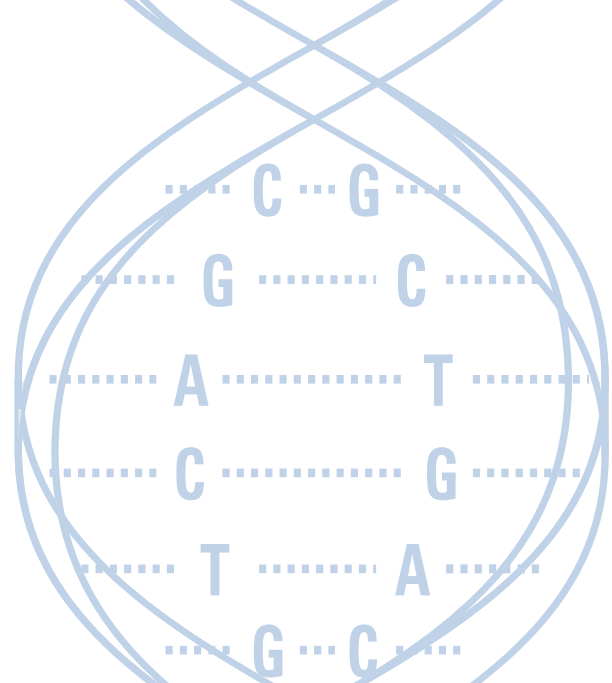
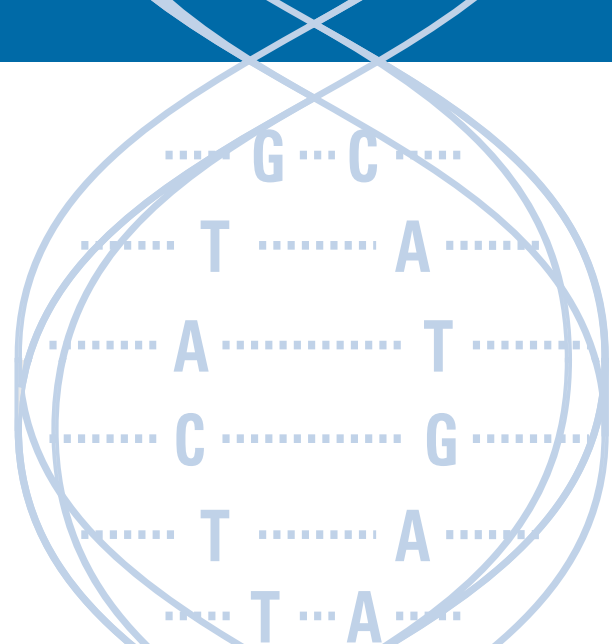
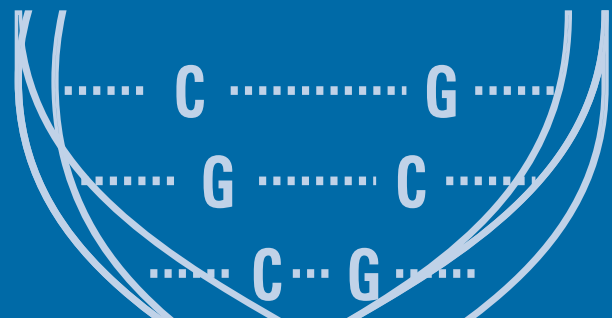
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42nd

ANNUAL ALFRED E. MIRSKY
HOLIDAY LECTURES ON SCIENCE

Turn On, Tune In:

*The Human Genome,
Molecular Switches and Signaling*



THE ROCKEFELLER UNIVERSITY

THURSDAY, DECEMBER 27, 2001

Lectures will be held in Caspary Auditorium.

The Rockefeller University

1230 York Avenue (at East 66th Street), New York, NY 10021

Thomas P. Sakmar

Professor and Head,

Laboratory of Molecular Biology and Biochemistry

Associate Investigator, Howard Hughes Medical Institute

10:30 a.m. – 12 p.m.

Genomes and Sequences

In the last year, we've read in newspapers and seen on TV numerous reports of the sequencing of the genomes of humans and other species. But what, exactly, is a genome? Rockefeller University Professor Thomas P. Sakmar will talk about genomes and how those of bacteria, flies, frogs and humans compare: Why are humans so much more complex than flies, which have only half as many genes as we do? What is evolution, and what does it mean at the molecular level? As organisms evolve to become more complex, they devote more and more DNA to encoding the protein building blocks of signal transduction networks—biochemical pathways that link detection of an external event to a cellular response. In the human genome, the largest category of genes build up and regulate signal transduction networks.

Lunch will be served between the lectures.

1 – 2:30 p.m.

Molecular Switches and Signaling

How does light stimulate the retina to initiate vision? How does a hormone trigger a response? How does HIV hijack cell-surface receptors to enter a cell and cause an infection? The common theme that ties together all these processes is signal transduction. Molecular switches interact with receptors to turn enzyme cascades on or off. Many human diseases are caused by defects in signal transduction, and many drugs target signal transduction proteins. Using the visual system as a model, Dr. Sakmar will explain how signal transduction in the nervous system works, and how receptors receive signals involved in many of the body's processes to turn on specific signaling cascades within cells.

For more information: www.rockefeller.edu/mirskylectures/