

LIFE: A MOLECULAR PERSPECTIVE

Coordinators: Norma Grossman, Joan Sobel

Beginning in the late 18th C., over 3 billion years after the earliest cell existed on earth, scientists began to understand the phenomenon we call “life”. They discovered its molecular building blocks, their varieties, roles, and complex interactions; research continues today. Our goal is to make this knowledge accessible to those with interest and enthusiasm but with limited background in the biological sciences. The major focus is on the human body, from cells to organ systems. We study their function, dysfunction, control, and integration. We conclude with the unique molecular capabilities of plants and selected microorganisms and animals. Our coursepack is assembled primarily from a college-level biology textbook. Readings are previewed in class.

Readings and other Required Materials:

The coursepack is assembled primarily from a college textbook; other materials are integrated as appropriate.

Norma Grossman taught biology for 26 years and has made a second career of it in the IRP since 1994. **Joan Sobel**, a psychiatrist, has coordinated many study groups in the areas of psychiatry and literature.

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Weeks 1-3:

- The basics of Chemistry.
- Elements and compounds essential to living things
- Cell structures and functions
- Hypotheses about origins of life
- Multicellular organisms: tissues, organs, organ systems

Weeks 4-9:

- The human body: molecular activities of the organ systems (nervous, endocrine, muscular, skeletal, gastrointestinal, reproductive, circulatory and respiratory)

- Genetic controls, diseases caused by molecular errors and malfunctions.

Weeks 10-11:

- Plants: their unique chemistry and capabilities
- Other forms of life with noteworthy chemical properties

Week 12:

Summary and a look to the future of research.