FIRST PRINCIPLE CALCULATIONS OF DEFECT STRUCTURES IN ZINC OXIDE

By

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An dissertation submitted in partial fulfillment of
the requirements for the degree of

DOCTOR OF PHILOSOPHY

NATIONAL INSTITUTE OF PHYSICS
University of the Philippines - Diliman

MAY 2020

To the Faculty of Washington State University:

The members of the Committee appointed to examine the dissertation of CHRISTIAN LOER T. LLEMIT find it satisfactory and recommend that it be accepted.

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Donald Trump, Ph.D.

Rodrigo Duterte, Ph.D.

ACKNOWLEDGMENT

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FIRST PRINCIPLE CALCULATIONS OF DEFECT STRUCTURES

IN ZINC OXIDE

Abstract

by Christian Loer T. Llemit, BS
University of the Philippines - Diliman
May 2020

: Roland V. Sarmago

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Dedication

This dissertation/thesis is dedicated to my mother and father who provided both emotional and financial support

Chapter One

INTRODUCTION

1.1 Purpose and Motivation

Describe the importance of defects in ZnO

1.2 Objectives

Study the mechanisms of different defects in ZnO

1.3 Outline

This is an example of how to cite [1]

Chapter Two

Review of Related Literature

2.1 Semiconductors

2.1.1 Properties

2.1.2 Applications of Semiconductors

2.1.3 Defects in Semiconductors

2.2 Zinc Oxide

describe ZnO in broad perspective

2.2.1 Crystal Structure

Consider different phases

2.2.2 Crystallographic Directions and Planes

2.2.3 Brillouin Zone Symmetry

2.2.4 Photoluminescence Properties

2.2.5 Defects

Chapter Three

THEORETICAL FRAMEWORK

3.1 Electronic Structure

3.1.1 Electronic Bandstructure

3.1.1.1 Bloch Wavefunctions

insert the symmetry points in IBZ.

3.1.2 Density of States

explains fermi dirac distribution

3.1.3 Projected Density of States

3.2 Many-body Quantum Mechanics

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3.2.1 Time Independent Schrödinger Equation

3.2.2 Simplifying Assumptions

3.2.3 Use of Atomic Units

3.2.4 Hamiltonian Operator

3.2.5 Indistinguishability of electrons

3.3 Early First Principle Calculations

3.3.1 n-electron problem

3.3.2 Hartree Method

3.3.3 Hartree-Fock Method

3.4 Density Functional Theory

3.4.1 Electron Density

3.4.2 Hohenberg-Kohn (HK) Formalism

3.4.2.1 First HK Theorem

3.4.2.2 Second HK Theorem

3.4.3 Kohn Sham (KS) Formalism

3.4.3.1 KS Equation

3.4.3.2 Energy Terms

3.4.4 Self Consistent Field Calculation

3.5 Exchange-correlation Functional

Chapter Four

DFT Calculation of Solids

4.1 Basis Sets

4.1.1 Plane Wave

4.1.2 Gaussian Orbital

4.1.3 Slater type orbitals

4.2 Pseudopotential Approach

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4.2.1 Freezing the core electrons

4.2.2 Pseudizing the valence electrons

4.2.3 Common Pseudopotentials

4.2.3.1 Norm-Conserving PP

4.2.3.2 Ultrasoft PP

4.2.3.3 Projector Augmented Wave

4.3 Choosing the appropriate Calculation Size

4.3.1 Use of Supercell

4.3.1.1 Periodic Boundary Conditions (PBC)

4.3.2 Use of Reciprocal Space

4.3.2.1 Reciprocal Lattice

4.3.2.2 First Brillouin Zone

4.3.2.3 Irreducible Brillouin Zone

4.3.3 k-point sampling

4.3.3.1 Monkhorst-Pack method

4.3.3.2 Gamma Point Sampling

Example of double quotes “word”. Lore

4.4 Bloch Representations

4.4.1 Electrons in solid

4.4.2 Bloch Theorem in periodic systems

4.4.3 Fourier Expansion of Bloch representations

4.4.3.1 Fourier Expansions

4.4.3.2 Fast Fourier Transformation (FFT)

4.4.3.3 Kohn-Sham Matrix Representations

4.5 Plane Wave (PW) Expansion

4.5.1 Basis Set

4.5.1.1 Local Basis Set

4.5.1.2 Plane Wave Basis Set

4.5.2 Plane Wave Expansion for KS quantities

4.5.2.1 Charge Density

4.5.2.2 Kinetic Energy

4.5.2.3 Effective Potential

4.6 Electronic Structure

4.6.1 Band Structure of free electrons

4.6.2 Band Structure of electrons in solids

4.6.3 Electronic Density of States

4.7 Practical Aspects

Chapter Five

Software Implementation

5.1 QUANTUM ESPRESSO

5.1.1 MKL Libraries

5.1.2 PWSCF routines

cbands, cegterg, cdiaghg

5.2 Intel Compilers

5.3 Executables

5.4 Computational Details

5.4.1 Convergence Testing

5.4.2 Hubbard correction parameters

5.4.3 Supercell creation

5.4.4 Slab Model

5.4.5 Structural relaxation

5.4.6 scf calculation

5.4.7 bandstructure calculation

5.4.8 dos calculation

DOST COARE

REFERENCES

1. Prades, J. D., Cirera, A. & Morante, J. R. Ab initio calculations of NO2 and SO2 chemisorption onto non-polar ZnO surfaces. *Sensors and Actuators, B: Chemical* **142,** 179–184 (1 Oct. 2009).

2. Wetterstrand, K. A. *DNA Sequencing Costs: Data from the NHGRI Genome Sequencing Program (GSP)* www.genome.gov/sequencingcosts.

APPENDIX

Appendix A

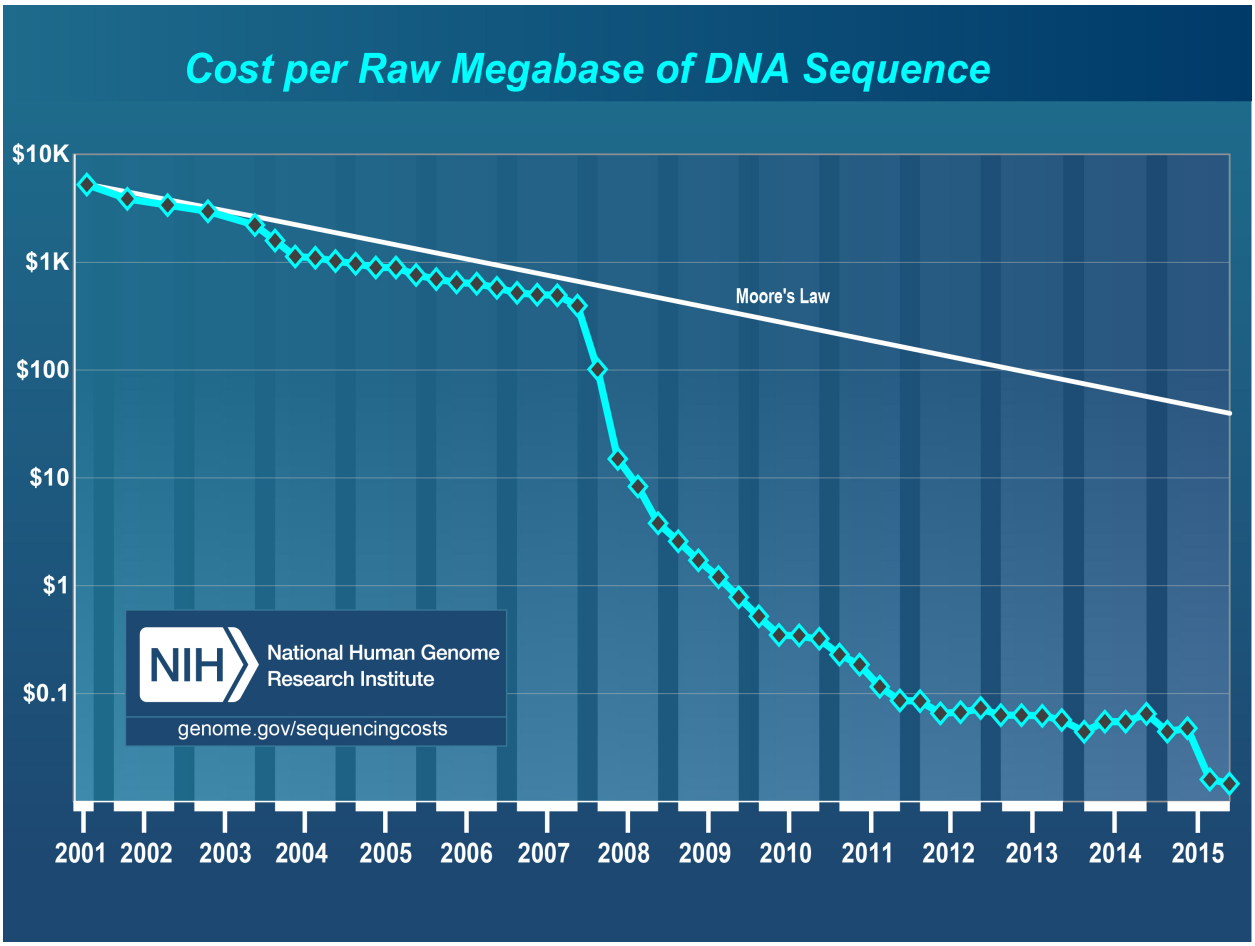

Figure A.1 Cost per raw megabase of DNA sequence from 2001 to 2015. Straight line - Moore's Law, blue curve - cost in US dollars, Y-axis scale is logarithmic. Graph reproduced from [2]

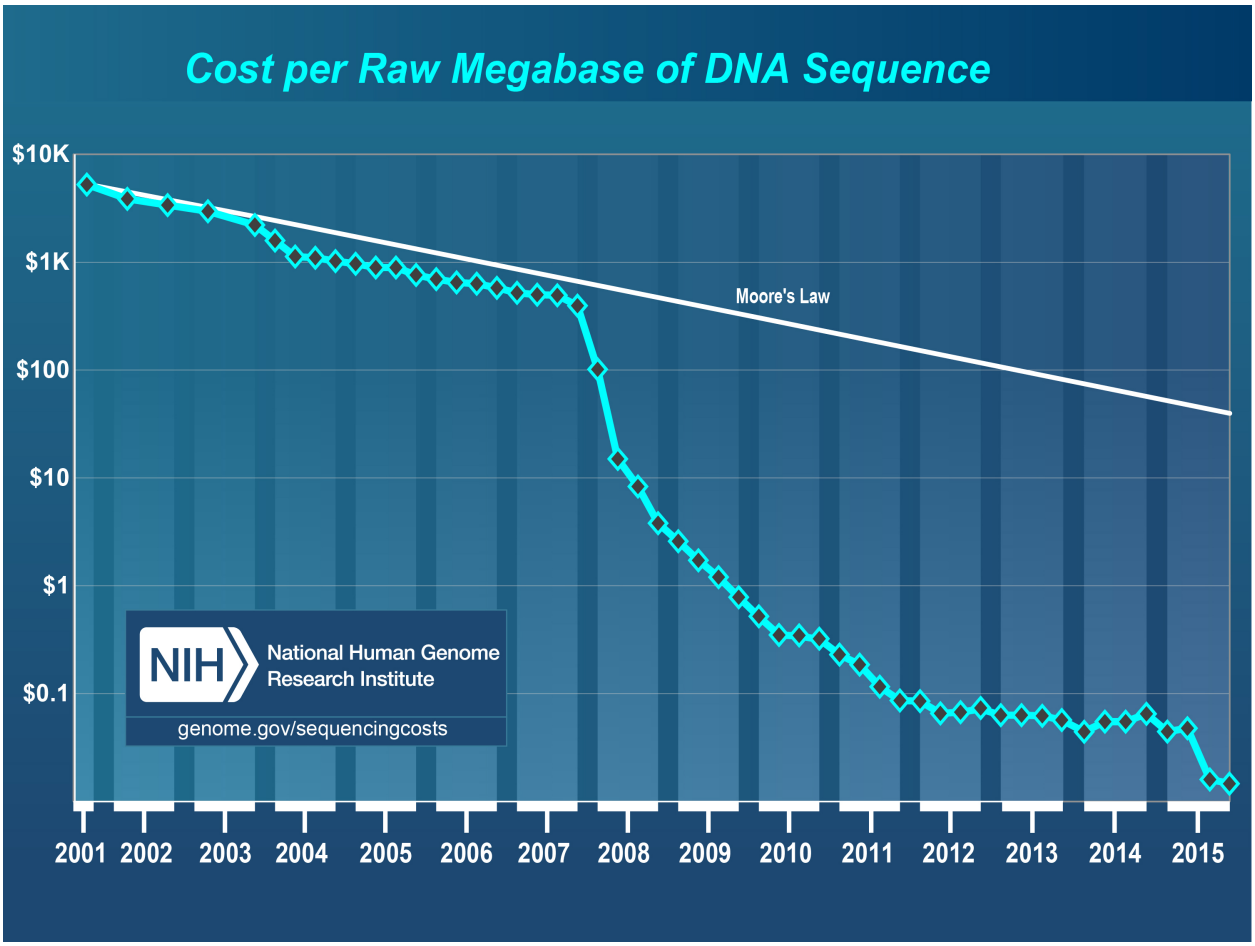

Figure A.2 Cost per raw megabase of DNA sequence from 2001 to 2015. Straight line - Moore's Law, blue curve - cost in US dollars, Y-axis scale is logarithmic. Graph reproduced from [2]

Appendix B

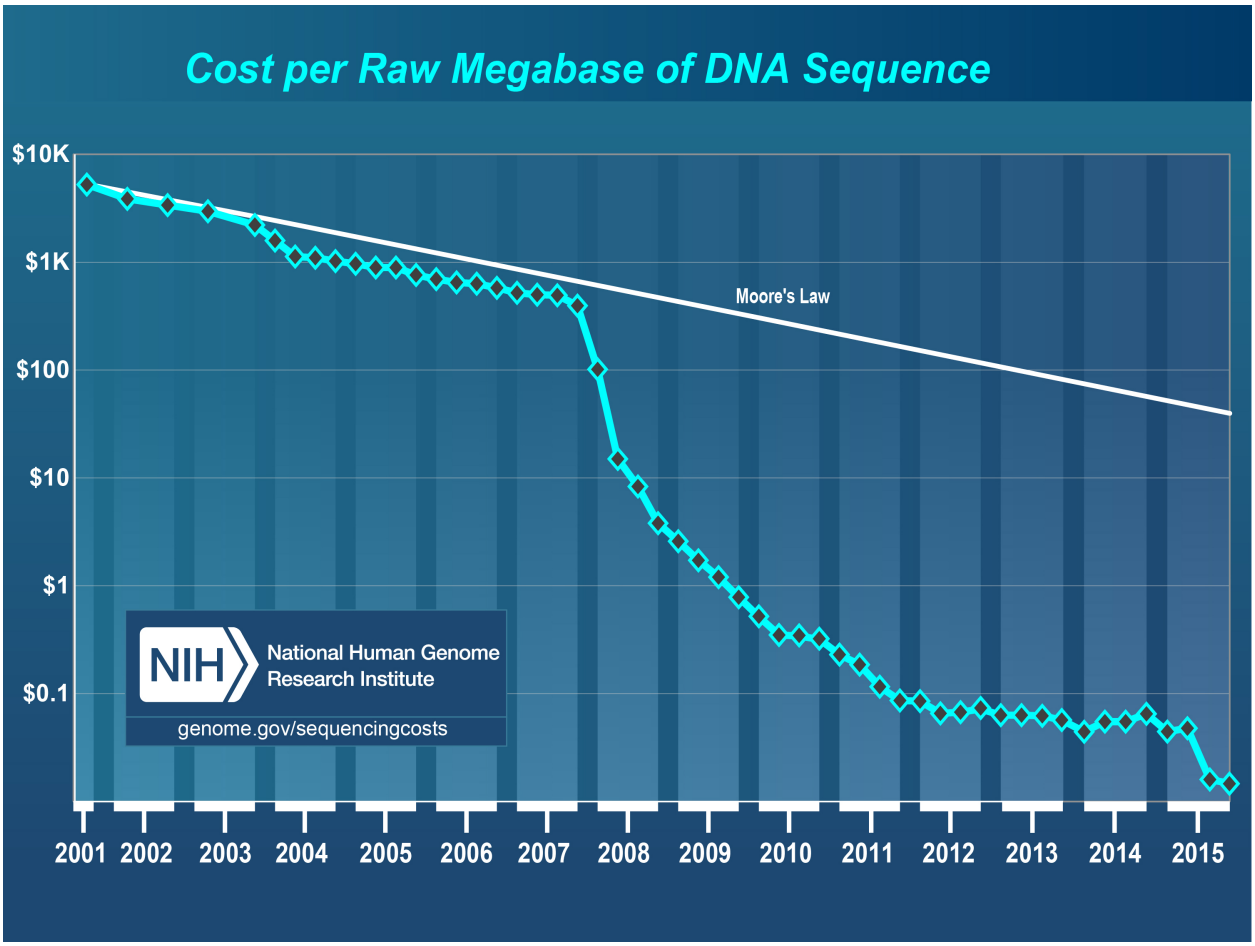

Figure B.1 Cost per raw megabase of DNA sequence from 2001 to 2015. Straight line - Moore's Law, blue curve - cost in US dollars, Y-axis scale is logarithmic. Graph reproduced from [2]

Appendix C

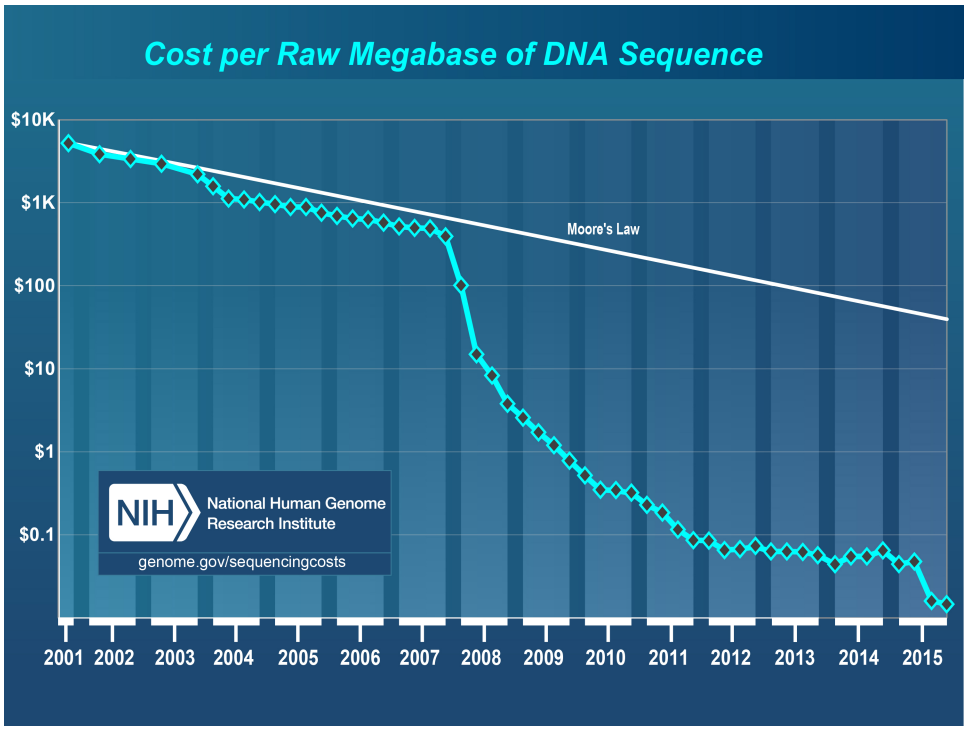

Figure C.1 Cost per raw megabase of DNA sequence from 2001 to 2015. Straight line - Moore's Law, blue curve - cost in US dollars, Y-axis scale is logarithmic. Graph reproduced from [2]

Appendix D

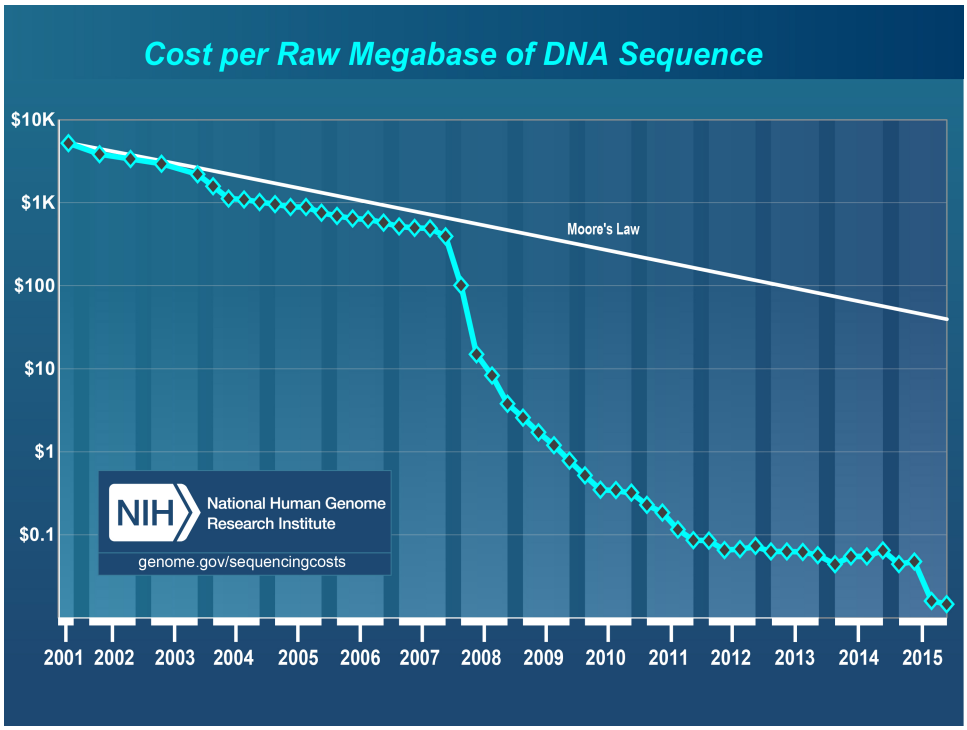

Figure D.1 Cost per raw megabase of DNA sequence from 2001 to 2015. Straight line - Moore's Law, blue curve - cost in US dollars, Y-axis scale is logarithmic. Graph reproduced from [2]

Appendix E

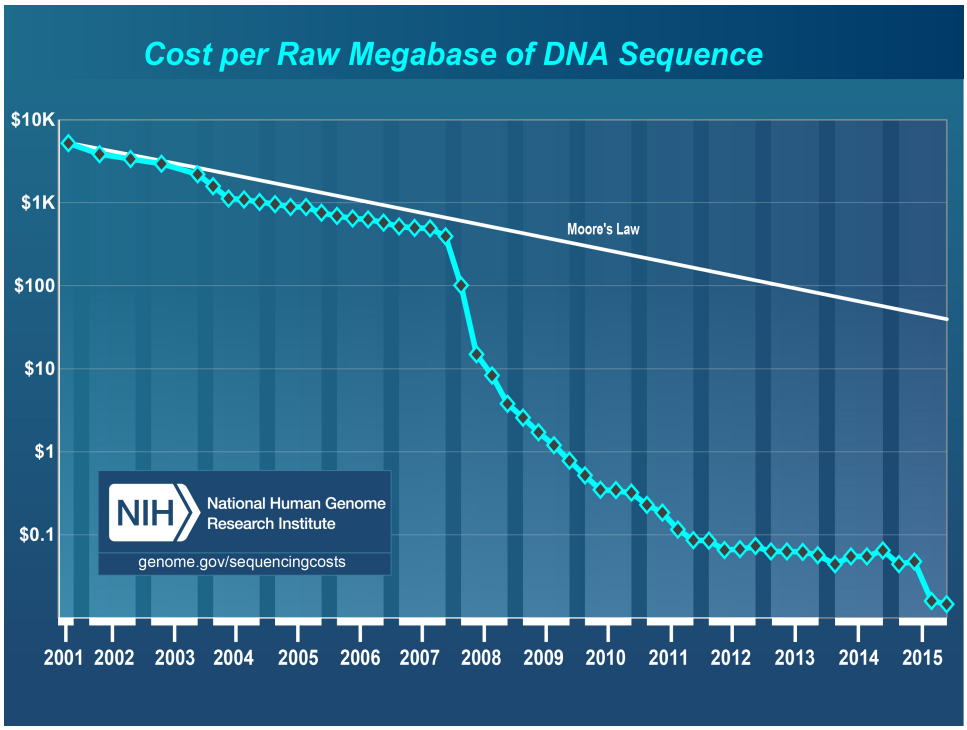

Figure E.1 Cost per raw megabase of DNA sequence from 2001 to 2015. Straight line - Moore's Law, blue curve - cost in US dollars, Y-axis scale is logarithmic. Graph reproduced from [2]