THE A-SQUARE TECHNOLOGY GROUP & NASCENT APPLIED METHODS AND ENDEAVOR'S ONESIMUS EQUATIONS PROCEDURAL CONFIGURATIONS, INTERPRETATIONS & APPROACHES FOR STRUCTURING GRAMMATIC GENOMES OR METHODIC CHROMOSOMAL SEQUENCING

A Pathway toward a Cure for all Diseases is what our Network's Ultimate Goal of Achievements are within the Realm of Pharmagenomics

BY WILLIAM EARL FIELDS (GCNO)

(ANMESCL^2 RDWEF)

ALPHA NUMEROUS MAXIMUS EGREGIOUS SUMMA CUM LAUDE

(ANMESCL^2 EL NEGRO)

ALPHA NUMEROUS MAXIMA EGREGIA SUMMA CUM LAUDE

(ANMESCL^2 QUO VADIS)

ALPHA NUMEROUS MAXIMUS EGREGION SUMMA CUM LAUDE

(ANMESCL^2 EL NEGRO)

ALPHA NUMEROUS MAXIMA
EGREGIA SUMMA CUM LAUDE

THE ONESIMUS EQUATIONS PROCEDURAL CONFIGURATIONS, INTERPRETATIONS & APPROACHES FOR STRUCTURING GRAMMATIC GENOMES OR METHODIC CHROMOSOMAL SEQUENCING

$$X^3 \left(RW = \frac{EH^2}{QM} \right)$$

Homo Economicus Universal

The Socioeconomic Base Equations for the Individualized Global Free Market Fusion of Information

For the first time in the history of mankind. The road representing financial security, which leads toward the **Commanding Heights** of global market economies, is no longer solely paved with the words, concepts & ideas of **Privatization**. But is additionally forged upon the creation of individualized innovative global free-market entrepreneurial business model & search engine technologies. Whose, patentable genetic-based consultative Planning & Design Approaches (PDAs) are interconnected, evolvable & user specific through personalizing internet content by way of the following grammatic formula(s); Whereas, the constant sum value of [**A^2**, **G^2**, **G^2**, **G^2**, **L^2**, **M^2**, **PA^2**, **T^3** & **T^3**] equals the measured quantitative significance of any number(s), letter(s), word(s), concept(s), idea(s), genomic sequence(s) or method(s) used to describe the existence or **processes** of a person(s), place(s) or thing(s), both currently known or unknown. Which, are also supplanted within the driving forces [**E**] behind the **M**eaning of Life [**M**], the **T**ree of Life [**T**], and of course **Q**uality of Life [**Q**] issues. Whereas, the **Process** is the genomic facilitation of single & multiple number, letter or word, strategies or tactics that simultaneously accommodate

systemic personal or organizational management, from a single point of origin, throughout the following distributed infrastructural linguistic resources involving the **Human Language System** (HLS) as a whole;

1. (2) **The Upper & Lower Level Chromosomal Processing – T^3**
   - **a)** The Upper Level virtual/real-time chromosomal processes consisting of Forward Chaining search engine protocols. (**EH^2**)
     - **I.** CMMI-SE-SW-IPPD, V1_02, Continuous.
   - **b)** The Lower Level virtual/real-time chromosomal processes consisting of Backward Chaining search engine protocols. (**QM^2**)
     - **I.** CMMI-SE-SW-IPPD, V1_02, Staged.
   - **c)** The Upper & Lower Level Change Components for Chromosomal Development & Implementation.
   - **d)** C4 Software Technology Reference Guide Taxonomies.

2. (3) **The Meaning of Life [M], The Tree of Life [T] and The Quality of Life [Q]**
   - **a)** The structural format for thesaurus based Words, Concepts & Fields of Human Activity
   - **b)** EGIOMMP [M], IGIMMP [T] and OGIBMMP [Q] (1. – 19.)
   - **c)** The Upper & Lower Level Change Components for Chromosomal Development & Implementation. (1. – 11.) [M], (1. – 4.) [T], (1. – 5.) [Q], and (1. – $3.^3$)
   - **d)** The IAOA Sense Interface Configuration
   - **e)** GHOST Technologies IBOS [DOSA/DALP/IAOA]
   - **f)** Genetic Arrays **(5' -> 3')**, **(3' <- 5')** and **(5' -> 3')**
   - **g)** Mathematical Formulae **PA^2**, **T^3 (UL)** and **T^3 (LL)**

3. (4) **The Systemic Consultative Management Areas**
   - **a)** Issues involving Power/Authority [**TTT**], Norms/Standards [CCT], Goals/Objectives [AAT] and Morale/Cohesion [GGT]
   - **b)** The Initial Genetic Sequences **TTT**, **CCT**, **GGT** and **AAT**
   - **c)** The 4 categories of Quantum Mechanic's Super String Theories

4. (5) **The Planning & Design Approach Operational Phases 1. – 5.**
   - **a)** The Operational Sense Interface (GSDBCPDA)
   - **b)** Also, configurations (15) SEI & SVP 1. – 16.

5. (6) **The Planning & Design Approach Matrix Elements and Dimensions**
   - **a)** The Timeline Matrix for Planning & Design Approaches
   - **b)** The Dimensional Matrix for Quantum Mechanic's Super String Theories

6. (8) **The Principle Parts of Speech**
   - **a)** The Hierarchical Structure of NAME
   - **b)** Formal Internet Protocols

7. (9) **The Internal Components of the Method Structure A. – I.**
   - **a)** The Upper Level Software Engineering Initiative Virtual Laboratory (SEI)
   - **b)** The Lower Level Software Engineering Body of Knowledge Real-Time Laboratory (SWEBOK)
   - **c)** Also, configurations (8) The Principle Parts of Speech

8. (10) **Biological Formatting**
   - **a)** Appendix – D's Distributed Artificial Life Procedural Guidelines
   - **b)** The Dictionary of Occupational Titles (DOT) Distributed Database Format

9. (12) **The 12 Method Structures of operational analogies involving the Human Body**

- **a)** The Initial Genetic Sequences (**TTT**, **TCC**, **TAA**, **TGG**, = **CTT**, **CCC**, **CAA**, **CGG**, = **ATT**, **ACC**, **AAA**, **AGG**, = **GTT**, **GCC**, **GAA**, **GGG**)
  - **I.** **TTT**, **TCC**, **CTC**, **CCT**, **TAA**, **ATA**, **AAT**, **TGG**, **GTG** and **GGT**
- **b)** The Lower Level focus of Trillium/Sniffer's Guide to Network Protocols
- **c)** The Operational Structure of NAME's Board of Network Representatives

10. (15) **Search Engine Integration & Systems Verification Processes 1. – 16.**

- **a)** The Search Engine's 5 – Phase Planning & Design Approach Genetic Relationships (Initial Genetic Sequences 1. **TTT – ATA**, 2. **CGG – AAT**, 3. **AAA – AGC**, 4. **AGG – GTG** and 5. **GCC – GGA**)
- **b)** Processes 1 – 16, Initial Genetic Sequences **TTT**, **TCC**, **TAA**, **TGG**, **CTT**, **CCC**, **CAA**, **CGG**, **ATT**, **ACC**, **AAA**, **AGG**, **GTT**, **GCC**, **GAA** and **GGG**.

11. (18) **Genetic-Based Consultative Planning & Design Approaches**

- **a)** The Planning & Design Approaches Operational Components (1. – 19.)
- **b)** EGIOMMP, IGIMMP and OGIBMMP (1. – 19.)

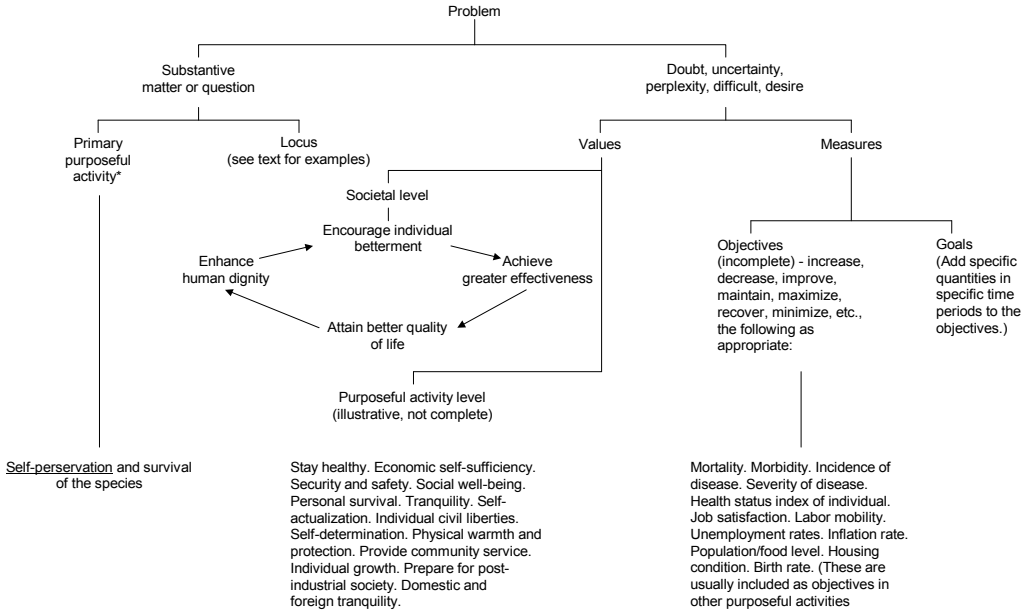
12. (20) **The 20 letters of the Amino Acid Sequences, being used to represent & square-off the 5 operational phases, by the 4 component areas of the Planning & Design Approach Procedural Matrix**.

- **a)** The 20 lettered Amino Acid Sequences of the Planning & Design Approach are; **1.** **{AE}** **2.** **{AF}** **3.** **{AG}** **4.** **{AH}** **5.** **{AI}**, **6.** **{BE}** **7.** **{BF}** **8.** **{BG}** **9.** **{BH}** **10.** **{BI}**, **11.** **{CE}** **12.** **{CF}** **13.** **{CG}** **14.** **{CH}** **15.** **{CI}**, **16.** **{DE}** **17.** **{DF}** **18.** **{DG}** **19.** **{DH}** **20.** **{DI}**;

$$T^3 \quad (L = \frac{I^2}{V})$$

- **A.** The Network Affiliation: The General Contractor of Network Operations (**GCNO**) Phase - 1
- **B.** The Principle Part of English Speech: Interjection(s)
- **C.** The Strategic & Tactical Component: **T**he **M**eaning of Life, **T**he **T**ree of Life & **T**he **Q**uality of Life Issues
- **D.** The Method Structure Components: The Problem Analysis & Definition – *Software Requirements/Target System* – TNPFP Approaches to Assessment (General)
- **E.** The Laboratory Component: The Interpretation Context, Extrapolation of Results & Further Work Involving Project Interpretation
- **F.** The Virtual Laboratory Component: T – (**M**) Problem Analysis, T – (**T**) Decision Analysis & T – (**Q**) Potential Problem Analysis
- **G.** The TCP/IP Division: IBM Protocols
- **H.** The Operational Determination: The Problem Format Involving the Planning & Design Approaches
- **I.** The Genetic Predisposition: The Planning & Design Approaches Subordinate to Genetic-Based Methodical Issues Involving GSDBCPDA Phases - 1

The Structural Format for Introducing Problem Solving Chromosomal Solutions into Genetic-Based Consultative P&D Interventions



* Several secondary purposeful activities may appear one or more times within a primary one: Make a decision: maintain a standard of achievement (control): resolve a conflict: develop creative ideas: establish priorities: observer model, or abstract phenomenon: practice or exercise: and focus land motivate individual efforts. None of these can be achieved without reference to a primary purposeful activity--make a decision about what, model a phenomenon when for what purposes, be creative about what, and so on.

Summary

Recognition of the values aspect of a problem has important implications for planning and design approaches within a genetic-based consultative intervention.

1. Developing clearly stated values, objectives and goals in a specific situation clarifies decision-making. Trade-offs can be shown and their impacts understood.
2. Understanding that the idea of values includes objectives and goals moves P&D from only vague "motherhood and apple pie" type statements toward specific criteria and measurable goals that seek to operationalized basic values.
3. Values clarification enables participants in a P&D effort to understand one another, reducing the disruptive potential of hidden agendas. It leads toward a collective sense of the purposes of a particular P&D effort, significantly influencing both solution and implementation.
4. Acknowledgment of the values aspect precludes the "objective" stance of the P&D expert. It incorporates subjectivity and human concerns. It removes P&D efforts from the realm of narrow disciplines and techniques. It forces the solution measures to transcend the merely quantifiable and to incorporate critical subjective factors. (No one has or probably will set the worth of a human life. Amounts calculated from, say, the number of prisoners released in

Cuba for an American "payment," are meaningless for all P&D purposes). Because P&D solutions affect so many people as well as the environment it is crucial that solutions reflect larger social values.

5. This document began with the assertion that there is no such thing as an "objective" problem. Instead, some thing or situation is perceived as a problem or need because of purposeful human activities, motivations, and aspirations. Because planning and design professionals seek to solve problems, the definition of what a "problem" is must become the basic starting point. A problem or need has a values aspect and a substantive one. The former includes the values, objectives, and goals implicit in human purposeful activities and those specific to a particular problem locus. The substantive aspect includes both types of problems-operating and supervising, research, planning and design, learning, or evaluation-and the problem locus. The locus is the specific what, when, who, and where of a particular situation. Also, this document which illustrates the formulation of the concept called "a problem," provides people with the opportunity to clarify what type of problem they confront, the specifics of the problem, and the values and measures associated both with the type of problem and the specific situation. It suggests to the problem solver an appropriate solution-finding approach and is a critical beginning to ensuring that the "right problem" will be solved.

The Concept of a Problem

Several secondary purposeful activities may appear one or more times within a primary one: Make a decision: maintain a standard of achievement (control): resolve a conflict: develop creative ideas: establish priorities: observer model, or abstract phenomenon: practice or exercise: and focus land motivate individual efforts. None of these can be achieved without reference to a primary purposeful activity--make a decision about what, model a phenomenon when for what purposes, be creative about what, and so on.

Ideas Involved in the Societal Value of Achieving Greater Effectiveness

(a) **Greater productivity,** increase the results of utilizing any resource such as person-hours, or getting the same results with less cost or time

(b) **Increased efficiency,** a component of productivity; minimize costs and waste of human, information, physical, and environmental resources

(c) **Improved profits** or return on investment (or assets or equity) for private sector organizations or apparently increased discretionary income for nonprofits (hospitals, museums)

(d) **Improved services** per dollar, or the same services for fewer dollars

(e) **Improved quality** of products, services, R&D results (utility, pleasantness of services, ease of effort, reduced waiting time, pluralism of solutions, etc.), and increased degree to which necessary purposes are achieved

(f) **Increased market share** or target population served

(g) **More built-in and continuing change** within any solution

(h) **Improved relationships** with various constituencies, such as customers (clients), suppliers, community, and labor representatives

(i) **Improved capacity to increase quantity of goods and services,** including reindustrialization, retrofitting of old facilities, and remanufacturing or recycling of artifacts that are considered worn out

Ideas Involved in the Societal Value of Attaining a Higher Quality of Life

(a) **Peace** among nations, elimination of aggression, international and national order, minimization of conflicts among groups
(b) **Standard of living,** including improved or optimum food and clothing, attractive housing, vacations, health status, recreation, number of work hours per week, general pleasantness and sociability, diets, medicines and vitamins, length of life, and labor-management relationships
(c) **Cost and level of health care delivery** in all situations (accidents, diseases, prevention, etc.)
(d) **Transportation and mobility systems**
(e) **Security in retirement and in the face of misfortune,** such as floods, tornadoes, hurricanes and sudden accidents
(f) **Enforcement of laws**
(g) **Defense of country**
(h) **Full employment**
(i) **Physical ease in work,** including the household
(j) **Availability of leisure time and resources,** such as community recreation facilities, swimming pools, art museums, music, parks, and theaters
(k) **Good environment** concerning air and water pollution, waste disposal and landfill sites, esthetically pleasing highway surroundings
(l) **Concern for those less fortunate,** including neighbors and developing countries

Ideas Involved in the Societal Value of Enhancing Human Dignity

(a) Each human has inherently unique capacities and qualities that should be respected as long as the uniqueness of others is also untrammeled
(b) Each person has many rights and freedoms: vote, speech, assembly, and freedom of thought and beliefs (religion, politics)
(c) Additional private time permits the pursuit of the unique activities that provide recognition, art, self-respect, culture, pleasure, and identification of individual sources of inner well-being and guidance
(d) We place a high value on each human life
(e) Features recently attained attesting to societal concerns for human dignity:

Improved safety regulations
Greater individual justice
Work humanization, quality of working life efforts, and corporate democracy
Corporate bill of rights for workers (free expression, security, protection regarding malfeasance, speedy and public hearing, due process, etc.)
Engineering awareness of the technology-human dignity idea Societal concern with the mentally ill, retarded and aged
Relocation and retraining by organizations of workers when technological changes reduce the need for them
Questioning by science and society of permissible limits to and proper conditions for experimentation with human beings and animals
Enhancement of individual privacy and freedom of information
Opportunities to learn for learner's sake alone or to satisfy curiosity

The Physiological Setting for Establishing a Genetic-Based Operational Strategy within a Consultative P&D Timeline Effort

(The Physical Actions Devised & Taken within a P&D Approach)

Functions to Be Accomplished
within Each DOT Factor = Chromosomal Alphanumeric Value { 5.002532928065e-5 }

***Pursuing the P&D Strategy through the Human Genome -** 115, 116, 117, 118, 119, 122, 124, 125, 181 & 185

Project selection **(Phase One)** - 52, 121, 130, 137, 148 & 213
P&D system structure **(Phase One)** - 84, 87, 102, 119, 137 & 138
Problem formulation **(Phase One)** - 17, 24, 25, 28 & 77*
Measures of effectiveness **(Phase One)** - 144, 160, 250 & 258
Creativity-idea generation **(Phase Two)** - 125, 150, 155 & 302
Regularity-conditionals **(Phase Two)** - 116, 149, 320 & 321
Target **(Phase Three)** - 148 & 151
Recommended solution **(Phase Four)** - 77*, 162, 165 & 198*
Approval **(Phase Four)** - 162, 168 & 175
Installation plan **(Phase Five)** - 171, 172 & 196** (MPC)
Preparation for operation **(Phase Five)** - 166 & 175
Performance measures **(Phase Five)** - 37, 87, 140, 177 & 318
Turn-over to operators **(Phase Five)** - 171, 295 & 269
Interrupt-delay **(Phase Five)** - 173 & 174

***Specifying and Presenting the Solution through Genetic or Chromosomal Development** - 84, 85, 86, 87, 88, 89, 90, 102, 153, 193, 198, 201, 202 & 323

Purpose (Fundamental, Values, Measures, Control, Interface & Future)
Inputs (Fundamental, Values, Measures, Control, Interface & Future)
Outputs (Fundamental, Values, Measures, Control, Interface & Future)
Sequence (Fundamental, Values, Measures, Control, Interface & Future)
Environment (Fundamental, Values, Measures, Control, Interface & Future)
Human agents (Fundamental, Values, Measures, Control, Interface & Future)
Physical catalysts (Fundamental, Values, Measures, Control, Interface & Future)
Information aids (Fundamental, Values, Measures, Control, Interface & Future)

***Involving People in Real-Time & Virtual Real-World Scenarios (Individual, Group, Inter-Group, Social System & Larger Social System) -** 40, 207*, 213*, 215, 224 & 233*

Goals/Objectives (Decision maker I)
Goals/Objectives (Decision maker 2)
Goals/Objectives (Elected Influential I)
Goals/Objectives (Business Influential 2)
Goals/Objectives (Internal Expert 1)

Goals/Objectives (External Expert 2)
Goals/Objectives (Internal Worker I)
Goals/Objectives (External Worker 2)
Power/Authority (Sequence Agents-P&D professional role I)
Power/Authority (Human Agents-P&D professional role 2)
Morale/Cohesion (Group process role 1)
Morale/Cohesion (Group process role 2)
Morale/Cohesion (Group process technique I)
Morale/Cohesion (Group process technique 2)
Norms/Standards (Meeting condition 1)
Norms/Standards (Meeting condition 2)

***Using Information and Knowledge** - 240*, 244, 251 & 255

Theory of **P&D-Axiology** - 240 & 241
Theory of **P&D-Philosophy** (Fundamental Principles) - 240 & 241
Theory of **P&D-Epistemology** - 240 & 241
Theory of **P&D-History** (Documented Events) - 240 & 241
Theory of **P&D-Pedagogy** (Educational Policies) - 240 & 241
Upper Chromosomal Levels using Information and knowledge in P&D I - 253
Lower Chromosomal Levels using Information and knowledge in P&D 2 - 259
Upper Chromosomal Levels using I & K in locus content area 1 - 255
Lower Chromosomal Levels using I & K in locus content area 2 - 256

***Arranging for Continuing Change and Improvement** - 264

Philosophical/Strategical Approaches (Readiness Factors Assessment – 269)
Physical/Operational Approaches (Project Betterment)
Psychological/Tactical Approaches (Favorable Behavior)
Sociological/ Policy (NAME Network Organizational policy 1)
Sociological/ Policy (Client Network Organizational policy 2)

Institutionalized Program - 264 & 295*

Structure (Nascent Applied Methods & Endeavors)
Education (Employment Related Educational Development)
Workshop Groups (Distributed Learning Environments)
Project Team (Nascent Applied Methods & Endeavors Management Structure)
P&D Research and Development (Infrastructural Framework for IBOS [DOSA/DALP/IAOA])
Program audit (Distributed Method Structures)

Enterprise Resource Planning (ERP), Manufacturing Resource Planning (MRP) & Group Ordering Logistics (GOL) - 315 & 323

Utilizing what is available (Enterprise Resource Planning)

Developing new I & K (Manufacturing Resource Planning)
Verifying the I & K IBOS [DOSA/DALP/IAOA]
Modifying the I & K (Employment Related Software Development)

Other Purposeful Activities - 8, 40 & 46

Operate and Supervise (Acceptant *Individual*)
Planning & Design (Confrontational *Group*)
Evaluate (Theory *Inter-Group*)
Research (Prescriptive *Social System*)
Learn (Catalytic *Larger Social System*)

Summary

The timeline is a representation of the theory & real-time implementation of P&D. It is placed here in a separate major category for further developments, because it has a unique potential for portraying what goes on in scenario-based P&D efforts. The categories above illustrates an overall format for displaying what happens during a project. The amount of time spent on each of the possible scenario functions that can be obtained by a review of the minutes and logbooks, tape recordings of meetings or "thinking aloud" by P&D people, self-recordings, or direct observations. Notes about what is actually being done (what techniques, model, people, dimension or element of a system matrix, and so on) at each time can be placed on the form. Models depicting intensity of efforts along the timeline may even emerge. Then, measures of the dependent variables, and solution implementability and quality (e.g., creativeness, built-in change, costs, effectiveness) can be obtained (by means of expert judgment, actual cost, time to implement, reliability, etc.) to serve as a basis for testing all sorts of hypotheses concerning the many "independent" variables in a P&D scenario.

Several other timeline representations may also be tested with data in the form of the categories above from many projects. The rich variety of forms the timeline data may take for research as well as operational purposes is illustrated by the use of path analysis to trace influences on the dependent variables, major nodes or events through a network model to portray various P&D activities in relation to major events (nodes), and decision tree to sketch out alternatives at each choice point in time (i.e., the PERT network diagram). Other types of research can also benefit from the use of the timeline data within the categories mentioned above for developments through: Correlation, multiple regression, computerized search processes with rather minimal partitioning to identify likely influential variables, and multiattribute utility assessment that could seek significant impacts on project selection, P&D system format, problem formulation, measures of effectiveness, and so on. Scenario-based P&D timeline information can thus provide gestalt perspectives as well as interaction and causal/reciprocal relationships of procedural components and the total P&D consultative effort.

The Consultative Details about Pursuing a Physiological Setting for Establishing Genetic-Based P&D Operational Strategies

(The Procedural Timeline Developments Devised & Taken within P&D Phases)

Phase 1 Determine Purpose Level {AE}, {BE}, {CE} & {DE}

A. Select P&D project from original, betterment, or correction requirements. **(1.)**

B. Set up P&D system structure. **(2.)**

C. Expand purposes into hierarchy(ies) and select needed purpose(s). **(3.)**

D. Identify measures of effectiveness for selected purpose(s). **(5.)**

E. Determine functional components (primarily for large or complex systems). **(6.)**

F. Select component(s) if **E** was needed. Return to **C.** **(4.)**

Phase 2 Generate Purposeful Alternatives (Ideal Systems) {AF}, {BF}, {CF} & {DF}

A. Develop ideal systems that would eliminate the need for selected purpose level. What ideas achieve a bigger-level purpose? **(7a.)**

B. Develop ideal systems for achieving the selected (and bigger-level) purpose by applying creativity processes. **(7b.)**

C. Develop ideal systems for achieving the selected (and bigger-level) purpose that eliminate the need for any assumed limitation. **(7c.)**

D. Develop ideal systems for regularity conditions. **(8a.)**

E. Develop ideal systems by reviewing list of purposes from Phase 1 to select suggestions contained therein. **(8b.)**

F. Develop ideal systems that must satisfy only one measure of effectiveness focusing on each one, one at a time, as if it were the only objective. **(8c.)**

G. Review the list of ideas generated. For each clearly unachievable idea, develop proposals for the nearest approximation that is close to being feasible. **(8d.)**

Phase 3 Devise Feasible Ideal Solution Target (FIST) {AG}, {BG}, {CG} & {DG}

A. Identify regularities for the target. **(8e.)**

B. Separate ideas into major alternatives and incorporate as many component ideas as possible into each alternative. **(9a.)**

C. Provide more detail for each major alternative to ensure workability and allow assessment of effectiveness. **(9b.)**

D. Identify each major alternative as contemplative or feasible. Review contemplative categories with experts to determine their present feasibility. **(9c.)**

E. Select feasible ideal system target (FIST) for regularities by evaluating the major alternatives with measures of effectiveness. **(10a.)**

F. Make FIST more ideal and as operational as possible. **(10b.)**

G. Save other ideas. **(10c.)**

Phase 4 Develop and Detail the Recommended Solution {AH}, {BH}, {CH} & {DH}

A. Develop alternatives for FIST components that will incorporate needed irregularities, exceptions, and conditions while staying as close as possible to the FIST. **(11a.)**

B. Estimate performances, outcomes, and consequences of each alternative to assess effectiveness, incorporate possible self-correction methods. **(11b.)**

C. Select the workable solution that is to be recommended for adoption or for approval before continuing to next stage of protocol. **(12.)**

D. Formulate plans to get final approval of the workable solution. **(13a.)**

E. Develop details of the solution as far as needed to permit its installation or movement to next stage of protocol. Use elements and dimensions of solution framework. **(13b.)**

F. Review the recommended solution framework with knowledgeable people to assure its implementability. **(13c.)**

Phase 5 Install the Workable Solution {AI}, {BI}, {CI} & {DI}

A. Test, simulate, or try out the solution. **(13d.)**

B. Set up installation/transition schedule (phase-in and overlap times, etc.). **(14.)**

C. Develop procedures for presenting and "selling" the solution. **(15a.)**

D. Prepare operational resources (equipment orders, location preparation, job descriptions, department specifications, train or shift personnel, etc.). **(15b.)**

E. Install solution (or proceed to next stage of protocol). **(16.)**

F. Provide close monitoring to follow up on and solve operational problems. **(17.)**

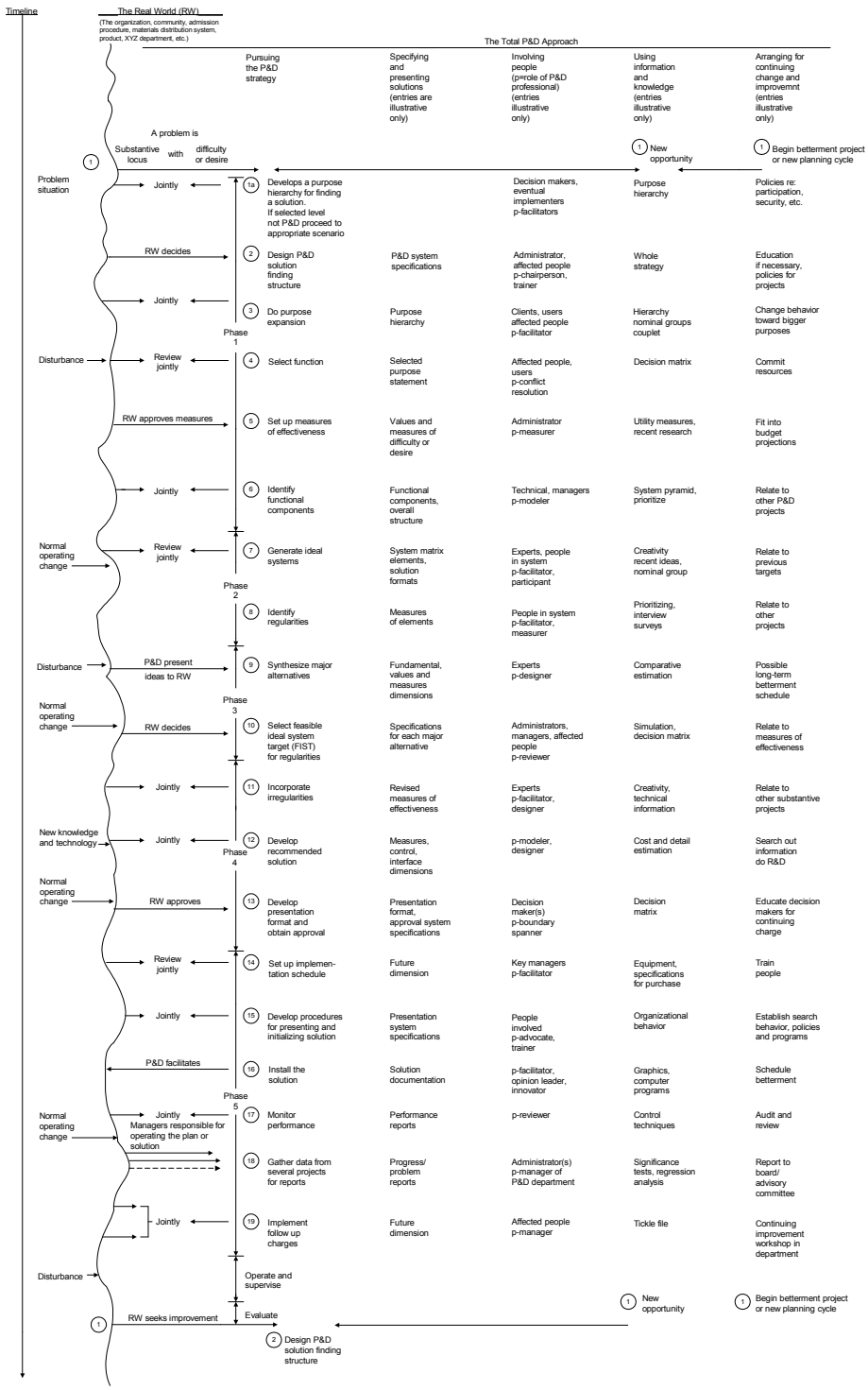
G. Establish operational performance measurements to provide operators/managers with norms. **(18a.)**

H. Evaluate performance of installed solution in terms of current goals, objectives, and purposes. **(18b.)**

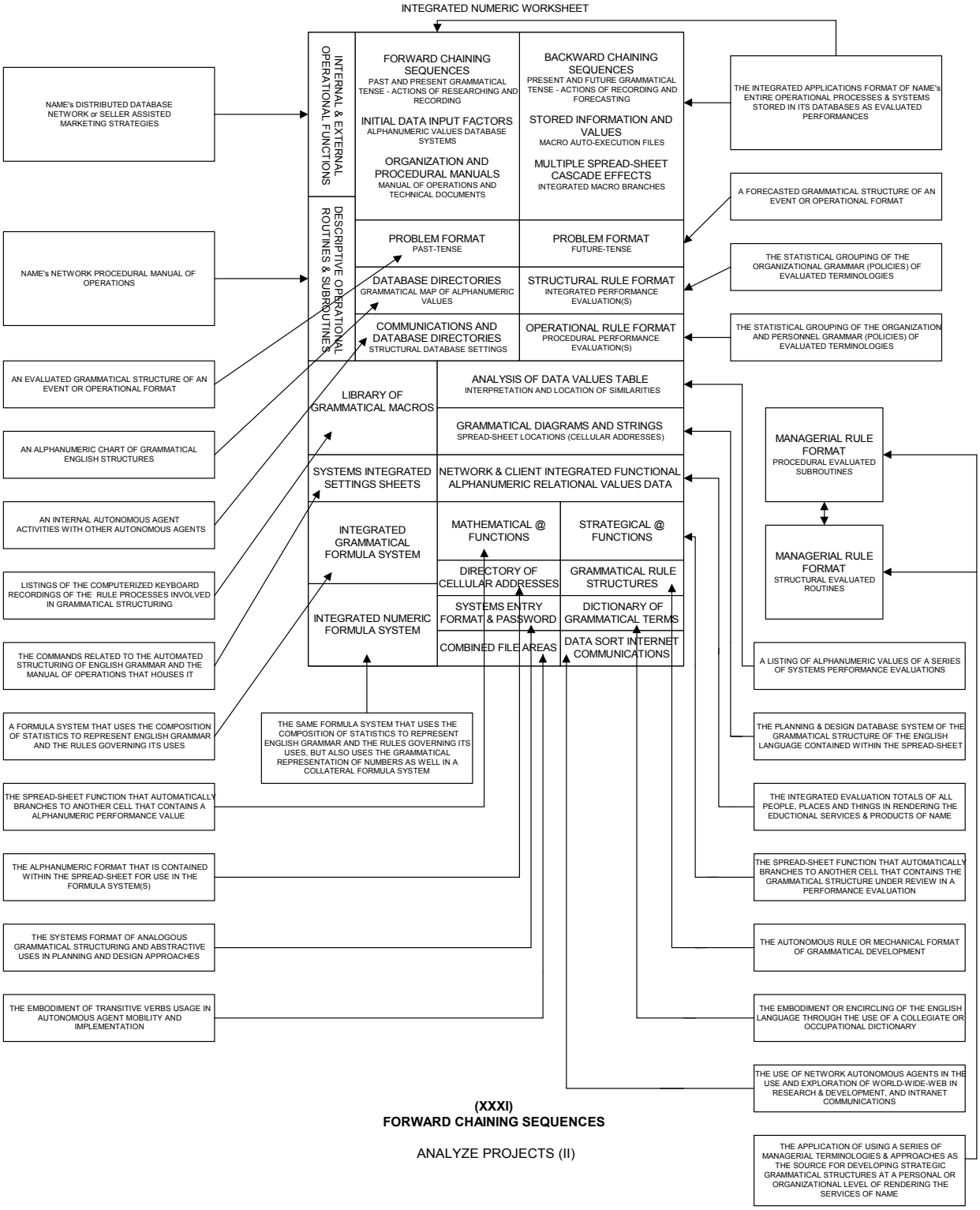
1. Establish timeline for planned betterment change of the installed solution. **(19a.)**

J. Aggregate performance data for all projects to report on P&D professional results. **(19b.)**

The Planning & Design Worksheet



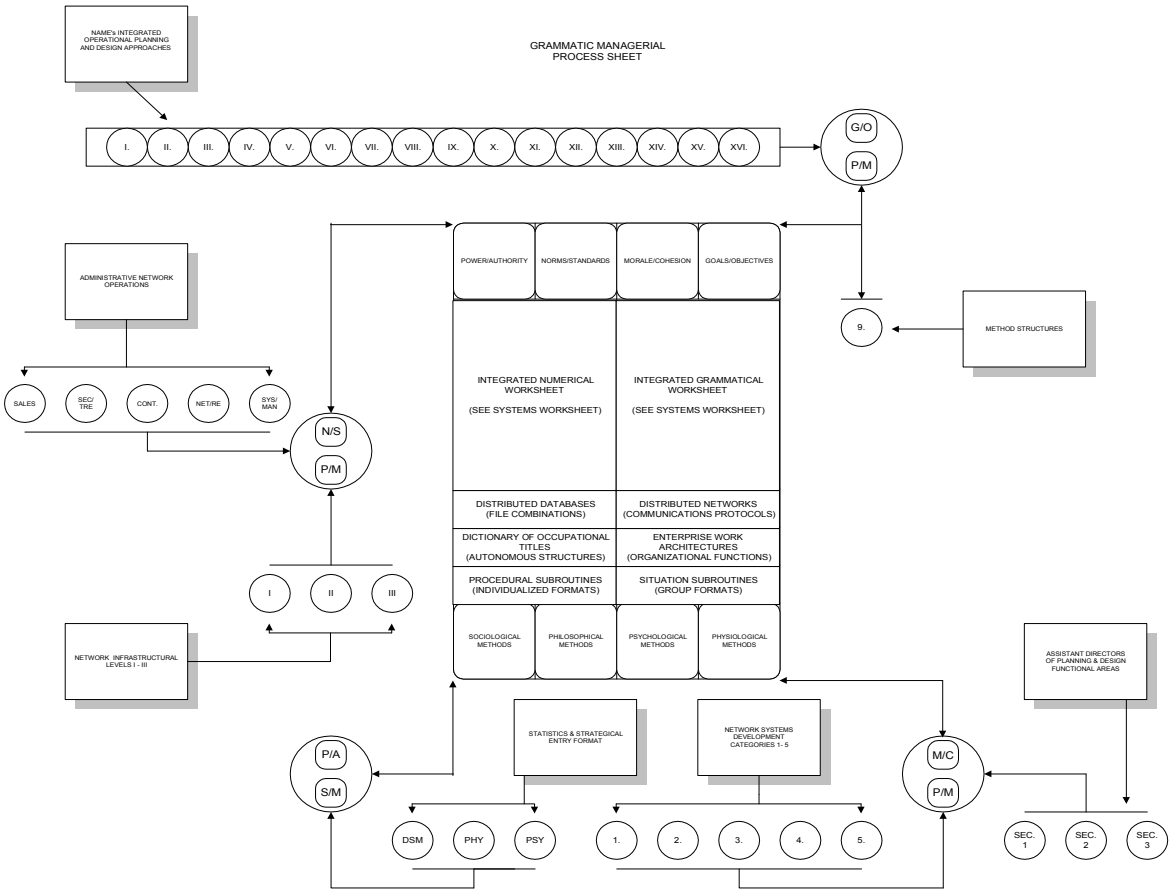
THE AUTONOMOUS AGENT WORKSHEET of INTERNAL PROCESSES, SYSTEMS
and
CHART OF PROCEDURES



(XXXI)
FORWARD CHAINING SEQUENCES

ANALYZE PROJECTS (II)

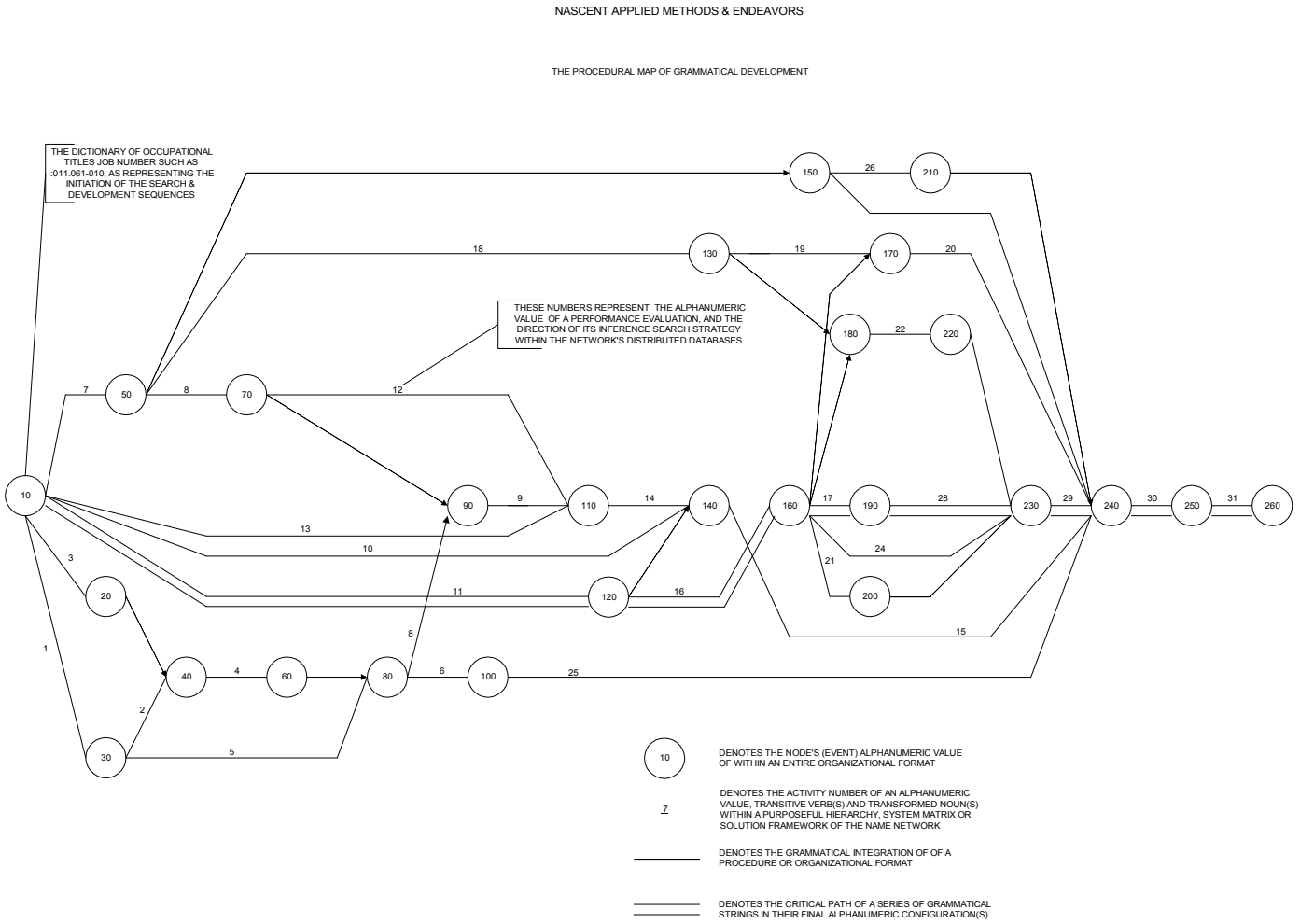
THE AUTONOMOUS AGENT MANAGERIAL PROCESSES SHEET, SYSTEMS
and
CHART OF PROCEDURES



(XXXII)
FORWARD CHAINING SEQUENCES

IDENTIFY MANAGEMENT STYLES (V)

The PERT Genetic-Based Structural Elements for Developing Consultative P&D Operational Timeline Strategies within a Chromosomal Purposeful Hierarchy

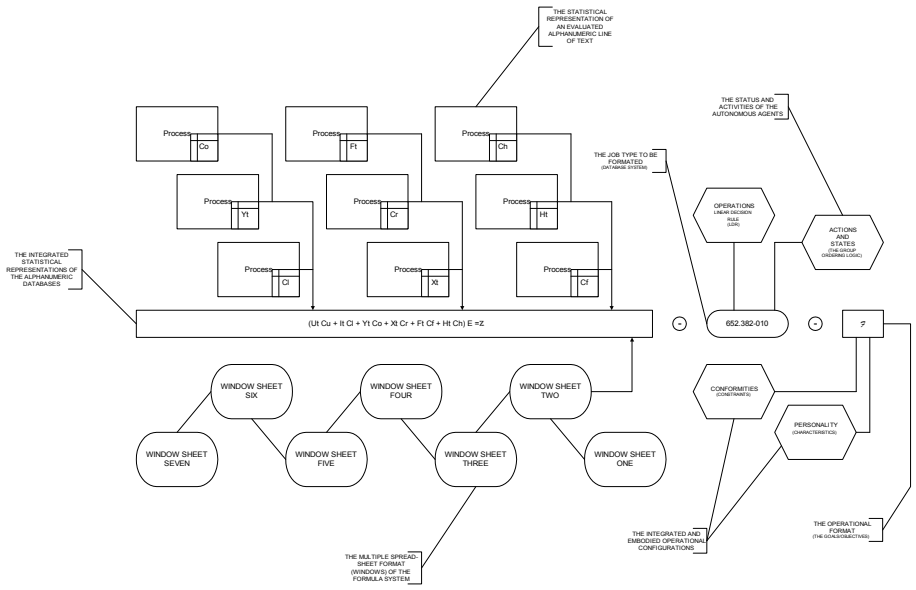


The Formula Matrix for Chromosomal Development & Implementation

(The IBOS [DALP/DOSA/IAOA] Genetic-Based Formula Matrix)

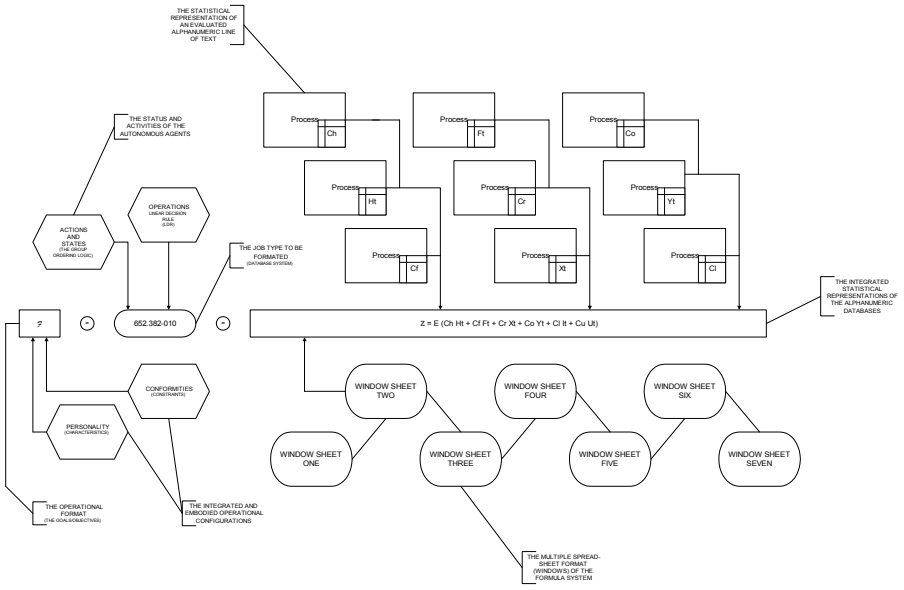
NASCENT APPLIED METHODS & ENDEAVORS

THE STATISTICAL ALPHANUMERIC FORMULA FORMAT



THE BACKWARD CHAINING SEQUENCES

(THE ANATOMICAL REPRESENTATION OF THE PERIPHEAL NERVOUS SYSTEM)



THE FORWARD CHAINING SEQUENCES

(THE ANATOMICAL REPRESENTATION OF THE AUTONOMIC NERVOUS SYSTEM)

The PERT Genetic-Based Structural Elements for Developing Consultative P&D Operational Timeline Strategies

Initially, for the specific reasons of highlighting the components within the multiple layers of systems chromosomes, we will allocate the use of a PERT network diagram. The PERT network diagram illustrates a comprehensive relationship between a consultative P&D job title, and its corresponding definition that are both derived from the Dictionary of Occupational Titles (DOT). The combination of which shall formally establish a graphical genetic correlation upon a unique premise. That unique premise, is that when IBOS [DOSA/DALP/IAOA] technology platforms are combined into an ERP/MRP format, it will facilitate a means of cloning the human mind & body into the digital realm by applying the human genome towards those words, concepts & ideas that defines a user's mental & physical state on a day-to-day basis, both on and off the job. Another unique premise of this technology base is that each & every user has the ability to patent their own copy of this technology that the NAME network supplies. After which, their unique perspectives both on & off the job, as far as experiences and programming are concerned, can be used to generate income into the thousands, if not millions of dollars, by qualifying and participating within the NAME network as a whole as an individual or business based entity.

Overall, the primary components of the PERT network diagram are symbolized to represent both the **P&D Chart** within the following pages, and the details of its internal structure in its entirety. Foremost, this begins with; **(1)** The **activity nodes**, with which multiple sectors of systems chromosomes, denote the grammatical structures of alphanumeric values & routines of an entire timeline scale of the **P&D Approach**. This area compresses information into an encrypted DNA pictorial of multiple chromosomes (i.e., DNA steganography); **(2)** The **activity pathways** within this area of the PERT network diagram, depicts the reflection of linguistic amino-acid sequences once they are applied toward those individual grammatic structures within the format of the P&D approach itself. And finally; **(3)** The **critical pathways** of the PERT network diagram, is that procedural issue that mirrors the movement of an entire consultative P&D approach time-scale, as it achieves completion along those areas focused toward **Formula-Based** problem-solving measures of effectiveness within a purposeful hierarchy. This process involves the procedural implementation, or strategic & tactical investigation of words, concepts or ideas within the ideological embodiment of people, places or things related to the Dictionary of Occupational Titles to start, and then towards those topics kindred to just about anything else.

Moreover, the possibilities of merging & dissecting an endless array of words, concepts & ideas based within the P&D consultative approaches involving people, places or things are offered with ease. Through simply cutting, copying, pasting or dragging & dropping those issues reflective within the individual nodes of the PERT network diagram, into other nodes within the same or closely related diagram of any & all subject matters currently under review. A more detailed collateral elaboration on the use of the PERT network diagram is offered within other documentation listing its applications elsewhere within the IBOS [DOSA/DALP/IAOA] technology theme of NAME's contractual appendices.

The Grammatic Structural Elements for Developing Molecular Proteins within a Consultative P&D Timeline Operational Strategy

1. **( )** - The Beginning & End of P&D Genome Structures (P&D Words, Concepts & Ideas)
2. **[ ]** - The Timeline Sequences for **P&D** Initiation [A – T]
   - **A.** The timeline representing the chronological passage of time. **Develops a Purpose Hierarchy for Finding a Solution (1.)**
   - **B.** Arbitrarily locates the present (second, minute, hour, day, week, month, or whatever unit), which automatically defines the past and the future. **Design the P&D Solution Finding Structure (2.)**
   - **C.** The symbolic representation of the conditions of the phenomenon of interest (e.g., food sources, construction methods, political structure) at a previous point of time. **Do Purpose Expansion (3.)**
   - **D.** The representation of current conditions. **Select Function (4.)**
   - **E.** The representation of future or proposed conditions. **Setup Measures of Effectiveness (5.)**
   - **F.** The description of a phenomenon's status at a particular time. **Identify Functional Components (6.)**
   - **G.** The description of a phenomenon's status further along in time. **Generate Ideal System (7a.)**, **(7b.)** & **(7c.)**
   - **H.** The static description of each phenomenon thus far. **Identify Regularities (8a.)**, **(8b.)**, **(8c.)**, **(8d.)** & **(8e.)**
   - **I.** The information about past conditions of the phenomenon that comes from various sources, depending on the particular time scale. **Synthesize Major Alternatives (9a.)**, **(9b.)** & **(9c.)**
   - **J.** Other sources that usually lead to static descriptions of the present. **Select Feasible Ideal System Target (FIST) for Regularities (10a.)**, **(10b.)** & **(10c.)**
   - **K.** Other sources that typically lead to predictions of static conditions at a point of time in the future. **Incorporate Irregularities (11a.)** & **(11b.)**
   - **L.** Developing a themata or historical time perspective about a particular issue, or set of issues. **Develop Recommended Solution(s) (12.)**
   - **M.** Approaches to understanding past phenomenon through the possibility of reversing the timeline. **Develop Presentation Format and Obtain Approval from Appropriate Authorities (13a.)**, **(13b.)**, **(13c.)** & **(13d.)**
   - **N.** Understanding the present through the Research, Evaluation, Operating and Supervising approaches. **Setup Implementation Schedule (14.)**
   - **O.** Procedures for understanding and changing the future of a phenomenon are needed & noted for different P&D approaches, and their relationship to the timeline. **Develop Procedures for Presenting and Initializing the Solution(s) (15a.)** & **(15b.)**
   - **P.** Setting up an installation schedule means expressing in detail what was general in the original project timeline. **Install the Solution(s) (16.)**
   - **Q.** Performance measurements for the whole solution or its components are based on the measures of effectiveness from pervious phases. **Monitor the Performance(s) (17.)**
   - **R.** Data can be expressed in various units: time per output, time per element, time per work component, output units per minute (or hour), number of citizens served per week, dollars per transaction, percentage of machine utilization, per

capita complaints, productivity index, percentage of material utilization, hours of direct labor, cost per unit, and so on. **Gather Data from Several Projects and Generate Reports (18a.) & (18b.)**

S. Involving people in the P&D strategy or system as inputs, outputs, part of the environment, actors in the follow-up P&D strategy, information aids, and human agents can maximize the number and effectiveness of implemented solutions and the effectiveness of utilizing P&D resources. **Implement Follow-Up Changes (19a) & (19b)**

T. Knowledge, information, and models aggregate data that can be used cost-effectively in P&D if each aggregation includes statements about it's relative inability to predict an occurrence or performance value of a future specific instance or case, emphasize the importance of it's integration with the other four P&D factors, and is presented with accuracy and precision values to reflect past and present conditions. **Reinitiate Purposeful Hierarchy (20)**

3. { } - **The Planning & Design Procedural Framework** { Procedural Snapshots in Time }
4. / / - Pursuing the Planning & Design Strategy
5. \ \ - Specifying & Presenting the Solution within Planning & Design Strategy
6. | | - Using Information & Knowledge within Planning & Design Strategy
7. - - - Arranging for Continuing Change & Improvement within Planning & Design Strategy
8. _ _ - Involving People within the Planning & Design Strategy
9. . . - Phase One within a Planning & Design Operational Strategy
10. , , - Phase Two within a Planning & Design Operational Strategy
11. ‘ ‘ - Phase Three within a Planning & Design Operational Strategy
12. “ “ - Phase Four within a Planning & Design Operational Strategy
13. * * - Phase Five within a Planning & Design Operational Strategy
14. __ - Actual Genome Sequences within a Planning & Design Grammatical Layout
15. ^ ^ - Actual Grammatic Genome Sequences of **Consultative Interventions** within a P&D Effort

The Molecular Protein Sequences for Developing Grammatic Stem Cells within a Consultative P&D Timeline Operational Strategy

The Physical Actions Devised & Taken within a P&D Approach ^{A B C D}^ *SQUARED BY*
The Procedural Timeline Developments Devised & Taken within P&D Phases ^{E F G H I}^
***EQUALS* 1. {AE} 2. {AF} 3. {AG} 4. {AH} 5. {AI}, 6. {BE} 7. {BF} 8. {BG} 9. {BH} 10. {BI},**
11. {CE} 12. {CF} 13. {CG} 14. {CH} 15. {CI}, 16. {DE} 17. {DF} 18. {DG} 19. {DH} 20. {DI}

An Example of the Grammatical Format for Developing Molecular Proteins within Consultative P&D Timeline Operational Strategy

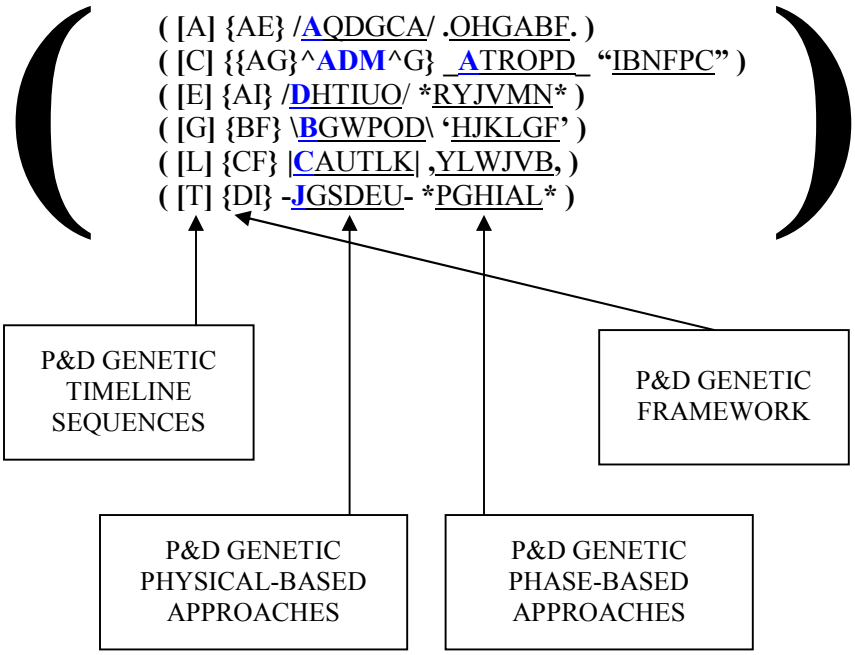
Chromosomal Alphanumeric Value { 5.002532928065e-5 }

1. **([A] {AE} /AQDGCA/ .OHGABF.)**
2. **([B] {AF}**

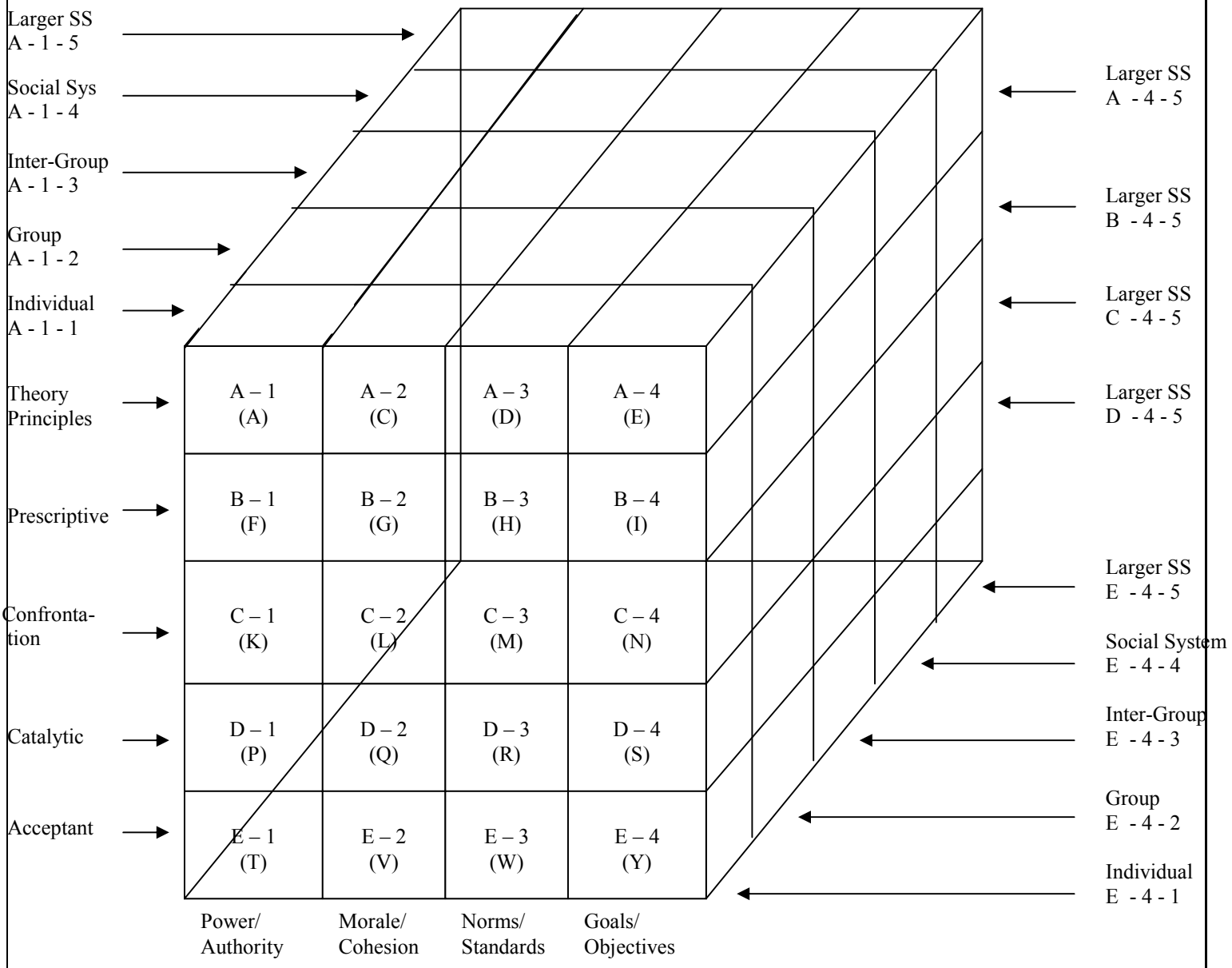
3. ([C] {AG} _ATROPD_ “IBNFPC”) or ([C] {{AG}^ADM^G} _ATROPD_ “IBNFPC”)
4. ([D] {AH}
5. ([E] {AI} /DHTIUO/ *RYJVMN*)
6. ([F] {BE}
7. ([G] {BF} \BGWPOD\ ‘HJKLGF’)
8. ([H] {BG}
9. ([I] {BH}
10. ([J] {BI}
11. ([K] {CE}
12. ([L] {CF} |CAUTLK| ,YLWJVB,)
13. ([M] {CG}
14. ([N] {CH}
15. ([O] {CI}
16. ([P] {DE}
17. ([Q] {DF}
18. ([R] {DG}
19. ([S] {DH}
20. ([T] {DI} -JGSDEU- *PGHIAL*)

The Genetic Configuration for Systems Entry and Chromosomal Manipulation within a Consultative P&D Timeline Operational Effort

Chromosomal Alphanumeric Value { 5.002532928065e-5 }



The Consul Cube for Establishing Genetic-Based Concepts within a Consultative P&D Effort Involving Amino Acid Sequencing



The Genetic Configuration for Systems Entry and Chromosomal Manipulation within a Consultative P&D Managerial or Operational Effort as it Relates to an Outline of Primary Jewish Law Sources

(The major sources are in **bold**.)

1. **Written Law** —**Torah [P&D Issues involving Norms/Standards]**
   a. **Genesis (Bereshit)**
   b. **Exodus (Shemot)**
   c. **Leviticus (Vayikra)**
   d. **Numbers (Bamidbar)**
   e. **Deuteronomy (D 'varim)**

   The 5 Books of the Torah as it Relates to the 5 Hemispheres of the Human Brain & the 5 Operational Phases of CPDA

2. **Oral Law** —Tannaitic Period (1 C.E.–220 C.E.) **[P&D Issues involving Power/Authority]**
   a. **Mishna** —"**The Beit Tefilah or House of Prayer**" (**R**eal **W**orld) The Mishna is divided into six orders (seder,sing.; sedarim,pl.), or in this case six matrix dimensions, each subdivided into several tractates (masekhet, sing.; masekhtot, pl.), or in this case 64 genetic matrix cells. Each masekhet is divided into chapters. Tractates marked with an "*"are also tractates in the Babylonian Talmud. The orders and the tractates are:

      i. Zeraim (lit.-seeds)—agricultural and food laws
         (1) Berakhot*
         (2) Peah
         (3) Demai
         (4) Kilayim
         (5) Shebiit
         (6) Terumot
         (7) Maaserot
         (8) Maaser Sheni
         (9) Challah
         (10) Orlah
         (11) Bikkurim

      ii. Moed (lit.-holidays)—laws relating to holiday and Sabbath rituals
         (1) Shabbat*
         (2) Erubin*
         (3) Pesachim*
         (4) Shekalim
         (5) Yoma*
         (6) Sukkah*
         (7) Besah*
         (8) Rosh Hashanah* *Law Library Journal* [Vol.98:2 244]
         (9) Taanit*
         (10) Megillah*
         (11) Moed Katan*
         (12) Hagigah*

iii. Nashim (lit.-women)—laws relating to marriage and divorce
   (1) Yebamot*
   (2) Ketubot*
   (3) Nedarim*
   (4) Nazir*
   (5) Sotah*
   (6) Gittin*
   (7) Kiddushin*

iv. Nezikin (lit.-damages)—laws of tort, other civil law, criminal law
   (1) Baba Kamma*
   (2) Baba Metzia*
   (3) Baba Batra*
   (4) Sanhedrin*
   (5) Makkot*
   (6) Shavuot*
   (7) Eduyot
   (8) Avodah Zarah*
   (9) Avot (also known as Pirkei Avot, Ethics of the Fathers)
   (10) Horayot*

v. Kodoshim (lit.-holy things)—laws relating to Temple sacrifice and ritual slaughter
   (1) Zevachim*
   (2) Menachot*
   (3) Chullin*
   (4) Bekhorot*
   (5) Arakhin*
   (6) Temurah*
   (7) Keritot*
   (8) Meilah*
   (9) Tamid*
   (10) Middot
   (11) Kinnim

vi. Tahorot (lit.-purity)—laws of ritual purity
   (1) Kelim
   (2) Ohalot
   (3) Negaim
   (4) Parah
   (5) Tohorot
   (6) Mikvaot
   (7) Niddah*
   (8) Makhshirin
   (9) Zabim
   (10) Tebul-Yom
   (11) Yadayim
   (12) Uksin

b. **Halakhic Midrashim** "**The Beit Midrash or House of Study**" (**E**ducational **H**ierarchies)

i. Mekhilta —On Exodus (Shemot)

ii. Sifra —On Leviticus (Vayikra)

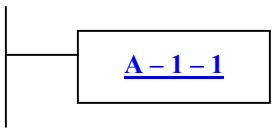
iii. Sifrei —On Numbers (Bamidbar)

iv. Sifrei —On Deuteronomy (D 'varim)

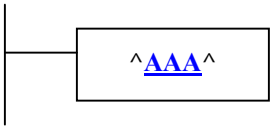
c. **Tosefta** "**The Beit Knesset or House of Prayer**" (**Q**uality **M**easures)

3. Amoraic Period (220 C.E.–500 C.E.) **[P&D Issues involving Morale/Cohesion]**
   a. **Gemara (Babylonian Talmud or Talmud Bavli)**—The Gemara tracks the order of the *Mishna.* Not all tractates of the *Mishna* are addressed. Those that are addressed are indicated with a "*"in the listing of the Mishna tractates above. **{Matrix Systems Dimensions}**
   b. Jerusalem Talmud or Talmud Yerushalmi **{Matrix Systems Elements}**

4. Post-Talumdic Period (Geonim, 7th Century –mid-11th Century; Rishonim, mid-11th Century –16th Century; Ahronim, 16th Century –present) **[P&D Issues involving Goals/Objectives]**
   a. Major commentaries on *Mishna/Gemara* **{CPDA Issues involving Morale/Cohesion}**



   b. Codes of Law **{CPDA Issues involving Power/Authority}**



   c. Responsa **{CPDA Issues involving Norms/Standards}**

   d. Other resources including takkanot (enactments), legal forms, and legal documents **{CPDA Issues involving Goals/Objectives}**

The Consul Cube Genomic Configurations for Establishing Genetic-Based Concepts within a Consultative P&D Effort

A Roman Emperor's Consul Mindset as 16 Separate Emperors Function as One In Reference to the GIDSTI Economic Principles Involving Julius Caesar as a Point of Origin for Modern Commercial Expansionism

1. **A-1 ^A^**
2. A-1-1 ^AAA^
3. A-1-2 ^AAF^
4. A-1-3 ^AAK^
5. A-1-4 ^AAP^
6. A-1-5 ^AAT^
7. **A-2 ^C^**
8. A-2-1 ^ACC^
9. A-2-2 ^ACG^
10. A-2-3 ^ACL^
11. A-2-4 ^ACQ^
12. A-2-5 ^ACV^
13. **A-3 ^D^**
14. A-3-1 ^ADD^
15. A-3-2 ^ADH^
16. A-3-3 ^ADM^
17. A-3-4 ^ADR^
18. A-3-5 ^ADW^
19. **A-4 ^E^**
20. A-4-1 ^AEE^
21. A-4-2 ^AEI^
22. A-4-3 ^AEN^
23. A-4-4 ^AES^
24. A-4-5 ^AEY^

25. **B-1 ^F^**
26. B-1-1 ^BFA^
27. B-1-2 ^BFF^
28. B-1-3 ^BFK^
29. B-1-4 ^BFP^
30. B-1-5 ^BFT^

31. **B-2 ^G^**
32. B-2-1 ^BGC^
33. B-2-2 ^BGG^
34. B-2-3 ^BGL^
35. B-2-4 ^BGQ^
36. B-2-5 ^BGV^
37. **B-3 ^H^**
38. B-3-1 ^BHD^
39. B-3-2 ^BHH^
40. B-3-3 ^BHM^
41. B-3-4 ^BHR^
42. B-3-5 ^BHW^
43. **B-4 ^I^**
44. B-4-1 ^BIE^
45. B-4-2 ^BII^
46. B-4-3 ^BIN^
47. B-4-4 ^BIS^
48. B-4-5 ^BIY^

49. **C-1 ^K^**
50. C-1-1 ^CKA^
51. C-1-2 ^CKF^
52. C-1-3 ^CKK^
53. C-1-4 ^CKP^
54. C-1-5 ^CKT^
55. **C-2 ^L^**
56. C-2-1 ^CLC^
57. C-2-2 ^CLG^
58. C-2-3 ^CLL^
59. C-2-4 ^CLQ^
60. C-2-5 ^CLV^

61. **C-3 ^M^**
62. C-3-1 ^CMD^
63. C-3-2 ^CMH^
64. C-3-3 ^CMM^
65. C-3-4 ^CMR^
66. C-3-5 ^CMW^
67. **C-4 ^N^**
68. C-4-1 ^CNE^
69. C-4-2 ^CNI^
70. C-4-3 ^CNN^
71. C-4-4 ^CNS^
72. C-4-5 ^CNY^

73. **D-1 ^P^**
74. D-1-1 ^DPA^
75. D-1-2 ^DPF^
76. D-1-3 ^DPK^
77. D-1-4 ^DPP^
78. D-1-5 ^DPT^
79. **D-2 ^Q^**
80. D-2-1 ^DQC^
81. D-2-2 ^DQG^
82. D-2-3 ^DQL^
83. D-2-4 ^DQQ^
84. D-2-5 ^DQV^
85. **D-3 ^R^**
86. D-3-1 ^DRD^
87. D-3-2 ^DRH^
88. D-3-3 ^DRM^
89. D-3-4 ^DRR^
90. D-3-5 ^DRW^

91. **D-4 ^S^**
92. D-4-1 ^DSE^
93. D-4-2 ^DSI^
94. D-4-3 ^DSN^
95. D-4-4 ^DSS^
96. D-4-5 ^DSY^

97. **E-1 ^T^**
98. E-1-1 ^ETA^
99. E-1-2 ^ETF^
100. E-1-3 ^ETK^
101. E-1-4 ^ETP^
102. E-1-5 ^ETT^
103. **E-2 ^V^**
104. E-2-1 ^EVC^
105. E-2-2 ^EVG^
106. E-2-3 ^EVL^
107. E-2-4 ^EVQ^
108. E-2-5 ^EVV^
109. **E-3 ^W^**
110. E-3-1 ^EWD^
111. E-3-2 ^EWH^
112. E-3-3 ^EWM^
113. E-3-4 ^EWR^
114. E-3-5 ^EWW^
115. **E-4 ^Y^**
116. E-4-1 ^EYE^
117. E-4-2 ^EYI^
118. E-4-3 ^EYN^
119. E-4-4 ^EYS^
120. E-4-5 ^EYY^

The 81 Sections of Strategic & Tactical Operations Involving the Principles of the Solution Framework within the 20 Relevant Terms of Government **(M/C)**

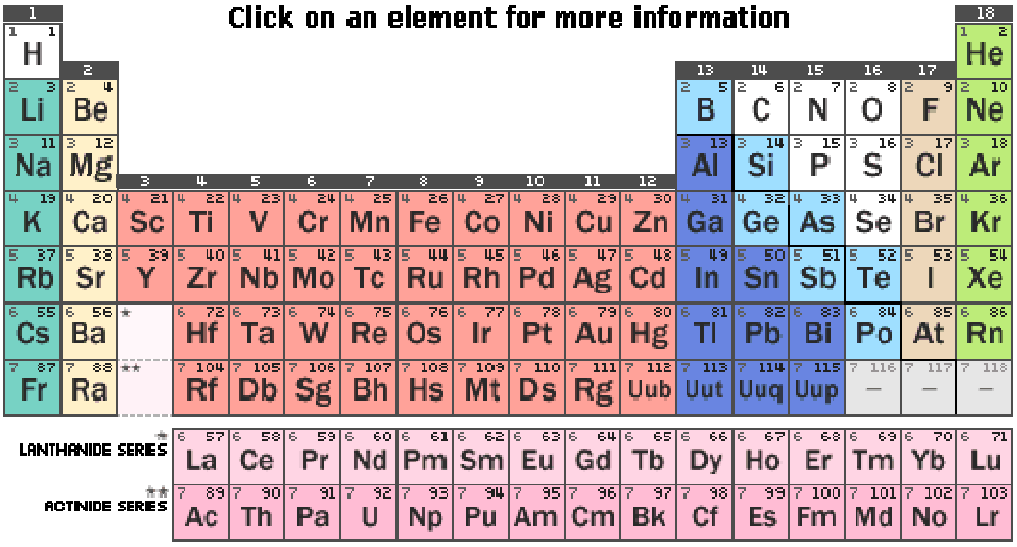
The 80 Structural Elements of Strategic & Tactical Operations Involving the Principles of the 48 Laws of Power within the 20 Economic Profiles **(P/A)**

The 84 Sections of Rambam within Strategic & Tactical Operations Involving the Governmental Principles & Systems within the 20 Classes of Government **(N/S)**

The 80 Legions of Roman Strategic & Tactical Operations Involving the Economic Principles & Systems within the 20 Attributes of Government **(G/O)**

The Alpha, Beta, Charlie, Delta & Echo 24 Chromosomal Base Pairings for the Upper & Lower Level Change Equation Components of the 24 Books within the Torah Shebiksav

The Periodic Table of Atomic Elements 18 Classes as it Relates to the 18 Components of the P&D Worksheet and Consul Cube



The 20 Industrial Chemical Classes as they Relate to the 20 Categorical Subject Matters of the Consul Cube A-1 to E-4

1	• FARM,ORCHARD & RANCH CHEMISTRY	11	• GLASS INDUSTRY CHEMISTRY & PROCESSING
2	• HEALTH INDUSTRY CHEMISTRY & RESEARCH	12	• FIBRE GLASS INDUSTRYS CHEMISTRY
3	• PETROLEUM INDUSTRY CHEMISTRY	13	• SEMI-CONDUCTOR INDUSTRY CHEMISTRY
4	• WATER DEVELOPMENT CHEMISTRY	14	• CONSTRUCTION INDUSTRY CHEMISTRY
5	• CLEANSER & DETERGENT CHEMISTRYS	15	• FOOD & BEVERAGE INDUSTRY CHEMISTRY
6	• HIDE & LEATHER INDUSTRY CHEMISTRY	16	• NATURAL HEALTH LIFESTYLE CHEMISTRY
7	• PLASTICS INDUSTRY CHEMISTRY	17	• BIO-CHEMISTRY RESEARCH CHEMISTRY
8	• PAINTS LACQUERS & COATINGS CHEMISTRY	18	• ENVIRONMENTAL CHEMISTRY
9	• PRINTING INKS & PAPERS CHEMISTRY	19	• SEWERAGE PROCESSING CHEMISTRY
10	• THREAD & CLOTH INDUSTRY CHEMISTRY	20	• METALLURGY • THE CHEMISTRY OF METALS

Atomic number	Name	Symbol	Period, Group	Chemical series	Mass (g/mol)
1	Hydrogen	H	1, 1	Nonmetal	1.00794(7)[1] [2] [3]
2	Helium	He	1, 18	Noble gas	4.002602(2)[1] [4]
3	Lithium	Li	2, 1	Alkali metal	6.941(2)[1] [2] [3] [4]
4	Beryllium	Be	2, 2	Alkaline earth metal	9.012182(3)
5	Boron	B	2, 13	Metalloid	10.811(7)[1] [2] [3]
6	Carbon	C	2, 14	Nonmetal	12.0107(8)[1] [3]
7	Nitrogen	N	2, 15	Nonmetal	14.0067(2)[1] [3]
8	Oxygen	O	2, 16	Nonmetal	15.9994(3)[1] [3]
9	Fluorine	F	2, 17	Halogen	18.9984032(5)
10	Neon	Ne	2, 18	Noble gas	20.1797(6)[1] [2]
11	Sodium	Na	3, 1	Alkali metal	22.98976928(2)
12	Magnesium	Mg	3, 2	Alkaline earth metal	24.3050(6)
13	Aluminum	Al	3, 13	Poor metal	26.9815386(8)
14	Silicon	Si	3, 14	Metalloid	28.0855(3)[3]
15	Phosphorus	P	3, 15	Nonmetal	30.973762(2)
16	Sulfur	S	3, 16	Nonmetal	32.065(5)[1] [3]
17	Chlorine	Cl	3, 17	Halogen	35.453(2)[1] [2] [3]
18	Argon	Ar	3, 18	Noble gas	39.948(1)[1] [3]
19	Potassium	K	4, 1	Alkali metal	39.0983(1)
20	Calcium	Ca	4, 2	Alkaline earth metal	40.078(4)[1]
21	Scandium	Sc	4, 3	Transition metal	44.955912(6)
22	Titanium	Ti	4, 4	Transition metal	47.867(1)
23	Vanadium	V	4, 5	Transition metal	50.9415(1)
24	Chromium	Cr	4, 6	Transition metal	51.9961(6)
25	Manganese	Mn	4, 7	Transition metal	54.938045(5)
26	Iron	Fe	4, 8	Transition metal	55.845(2)
27	Cobalt	Co	4, 9	Transition metal	58.933195(5)
28	Nickel	Ni	4, 10	Transition metal	58.6934(2)
29	Copper	Cu	4, 11	Transition metal	63.546(3)[3]
30	Zinc	Zn	4, 12	Transition metal	65.409(4)
31	Gallium	Ga	4, 13	Poor metal	69.723(1)
32	Germanium	Ge	4, 14	Metalloid	72.64(1)
33	Arsenic	As	4, 15	Metalloid	74.92160(2)
34	Selenium	Se	4, 16	Nonmetal	78.96(3)[3]
35	Bromine	Br	4, 17	Halogen	79.904(1)
36	Krypton	Kr	4, 18	Noble gas	83.798(2)[1] [2]
37	Rubidium	Rb	5, 1	Alkali metal	85.4678(3)[1]
38	Strontium	Sr	5, 2	Alkaline earth metal	87.62(1)[1] [3]
39	Yttrium	Y	5, 3	Transition metal	88.90585(2)
40	Zirconium	Zr	5, 4	Transition metal	91.224(2)[1]
41	Niobium	Nb	5, 5	Transition metal	92.906 38(2)
42	Molybdenum	Mo	5, 6	Transition metal	95.94(2)[1]
43	Technetium	Tc	5, 7	Transition metal	[98.9063][5]
44	Ruthenium	Ru	5, 8	Transition metal	101.07(2)[1]
45	Rhodium	Rh	5, 9	Transition metal	102.90550(2)
46	Palladium	Pd	5, 10	Transition metal	106.42(1)[1]
47	Silver	Ag	5, 11	Transition metal	107.8682(2)[1]
48	Cadmium	Cd	5, 12	Transition metal	112.411(8)[1]
49	Indium	In	5, 13	Poor metal	114.818(3)
50	Tin	Sn	5, 14	Poor metal	118.710(7)[1]
51	Antimony	Sb	5, 15	Metalloid	121.760(1)[1]
52	Tellurium	Te	5, 16	Metalloid	127.60(3)[1]
53	Iodine	I	5, 17	Halogen	126.90447(3)

54	Xenon	Xe	5, 18	Noble gas	131.293(6)[1] [2]
55	Caesium	Cs	6, 1	Alkali metal	132.9054519(2)
56	Barium	Ba	6, 2	Alkaline earth metal	137.327(7)
57	Lanthanum	La	6	Lanthanide	138.90547(7)[1]
58	Cerium	Ce	6	Lanthanide	140.116(1)[1]
59	Praseodymium	Pr	6	Lanthanide	140.90765(2)
60	Neodymium	Nd	6	Lanthanide	144.242(3)[1]
61	Promethium	Pm	6	Lanthanide	[146.9151][5]
62	Samarium	Sm	6	Lanthanide	150.36(2)[1]
63	Europium	Eu	6	Lanthanide	151.964(1)[1]
64	Gadolinium	Gd	6	Lanthanide	157.25(3)[1]
65	Terbium	Tb	6	Lanthanide	158.92535(2)
66	Dysprosium	Dy	6	Lanthanide	162.500(1)[1]
67	Holmium	Ho	6	Lanthanide	164.93032(2)
68	Erbium	Er	6	Lanthanide	167.259(3)[1]
69	Thulium	Tm	6	Lanthanide	168.93421(2)
70	Ytterbium	Yb	6	Lanthanide	173.04(3)[1]
71	Lutetium	Lu	6, 3	Lanthanide	174.967(1)[1]
72	Hafnium	Hf	6, 4	Transition metal	178.49(2)
73	Tantalum	Ta	6, 5	Transition metal	180.9479(1)
74	Tungsten	W	6, 6	Transition metal	183.84(1)
75	Rhenium	Re	6, 7	Transition metal	186.207(1)
76	Osmium	Os	6, 8	Transition metal	190.23(3)[1]
77	Iridium	Ir	6, 9	Transition metal	192.217(3)
78	Platinum	Pt	6, 10	Transition metal	195.084(9)
79	Gold	Au	6, 11	Transition metal	196.966569(4)
80	Mercury	Hg	6, 12	Transition metal	200.59(2)
81	Thallium	Tl	6, 13	Poor metal	204.3833(2)
82	Lead	Pb	6, 14	Poor metal	207.2(1)[1] [3]
83	Bismuth	Bi	6, 15	Poor metal	208.98040(1)
84	Polonium	Po	6, 16	Metalloid	[208.9824][5]
85	Astatine	At	6, 17	Halogen	[209.9871][5]
86	Radon	Rn	6, 18	Noble gas	[222.0176][5]
87	Francium	Fr	7, 1	Alkali metal	[223.0197][5]
88	Radium	Ra	7, 2	Alkaline earth metal	[226.0254][5]
89	Actinium	Ac	7	Actinide	[227.0278][5]
90	Thorium	Th	7	Actinide	232.03806(2)[5] [1]
91	Protactinium	Pa	7	Actinide	231.03588(2)[5]
92	Uranium	U	7	Actinide	238.02891(3)[5] [1] [2]
93	Neptunium	Np	7	Actinide	[237.0482][5]
94	Plutonium	Pu	7	Actinide	[244.0642][5]
95	Americium	Am	7	Actinide	[243.0614][5]
96	Curium	Cm	7	Actinide	[247.0703][5]
97	Berkelium	Bk	7	Actinide	[247.0703][5]
98	Californium	Cf	7	Actinide	[251.0796][5]
99	Einsteinium	Es	7	Actinide	[252.0829][5]
100	Fermium	Fm	7	Actinide	[257.0951][5]
101	Mendelevium	Md	7	Actinide	[258.0986][5]
102	Nobelium	No	7	Actinide	[259.1009][5]
103	Lawrencium	Lr	7, 3	Actinide	[260.1053][5]
104	Rutherfordium	Rf	7, 4	Transition metal	[261.1087][5]
105	Dubnium	Db	7, 5	Transition metal	[262.1138][5]
106	Seaborgium	Sg	7, 6	Transition metal	[263.1182][5]
107	Bohrium	Bh	7, 7	Transition metal	[262.1229][5]
108	Hassium	Hs	7, 8	Transition metal	[265][5]

109	Meitnerium	Mt	7, 9	Transition metal	[266][5]
110	Darmstadtium	Ds	7, 10	Transition metal	[269][5]
111	Roentgenium	Rg	7, 11	Transition metal	[272][5]
112	Ununbium	Uub	7, 12	Transition metal	[285][5]
113	Ununtrium	Uut	7, 13	Poor metal	[284][5]
114	Ununquadium	Uuq	7, 14	Poor metal	[289][5]
115	Ununpentium	Uup	7, 15	Poor metal	[288][5]
116	Ununhexium	Uuh	7, 16	Poor metal	[292][5]
117	Ununseptium	Uus	7, 17	Halogen	[6]
118	Ununoctium	Uuo	7, 18	Noble gas	[294][5]

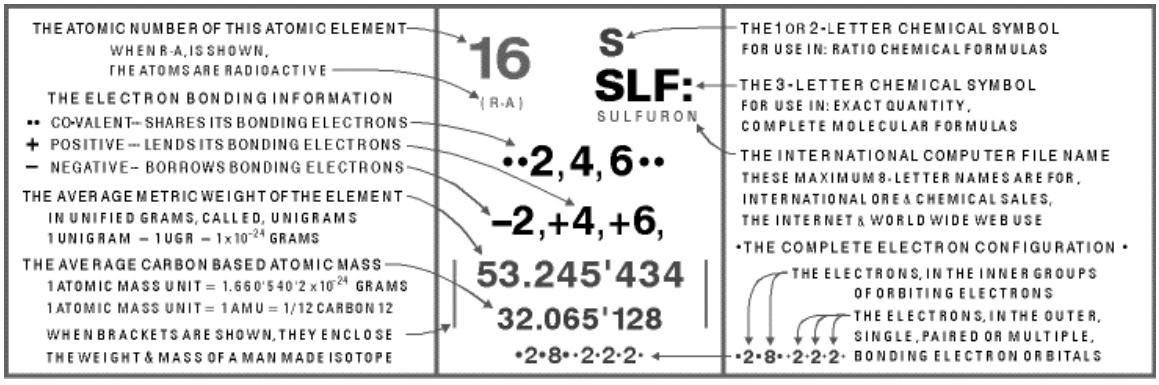
The New 3 Letter Symbols of Atomic Elements as they relate to the 3 Letter Symbols of the Consul Cube & that of the 3 Translations of the Noble Qur'an

1• HDR....HYDROGEN	22• TTN....TITANIUM	43• TCN...TECHNETIUM	64• GDL...GADOLINIUM
2• HLI.....HELIUM	23• VND...VANADIUM	44• RTN....RUTHENIUM	65• TRB...TERBIUM
3• LTI.....LITHIUM	24• CRM...CHROMIUM	45• RDI.....RHODIUM	66• DPR...DYSPROSIUM
4• BRL....BERYLLIUM	25• MNG..MANGANESE	46• PLD....PALLADIUM	67• HLM...HOLMIUM
5• BOR...BORON	26• IRO....IRON	47• SLV....SILVER	68• ERB...ERBIUM
6• CBN...CARBON	27• CBL...COBALT	48• CDM..CADMIUM	69• TUL...THULIUM
7• NTR...NITROGEN	28• NQL...NICKEL	49• IND....INDIUM	70• ITE....YTTERBIUM
8• OCS...OXYGEN	29• CPR...COPPER	50• TIN....TIN	71• LTE....LUTETIUM
9• FLR....FLUORINE	30• ZNC.....ZINC	51• STB...STIBNIUM	72• HAF...HAFNIUM
10• NEO...NEON	31• GLI.....GALLIUM	52• TLR...TELLURIUM	73• TTL....TANTALUM
11• SDI.....SODIUM	32• GER....GERMANIUM	53• IOD....IODINE	74• TNG...TUNGSTEN
12• MAG..MAGNESIUM	33• ARS....ARSENIC	54• ZNN...XENON	75• RNI....RHENIUM
13• ALU...ALUMINIUM	34• SLN.....SOLENIUM	55• CES..CESIUM	76• OSM..OSMIUM
14• SLC...SILICON	35• BRM....BROMINE	56• BRI....BARIUM	77• IRI.....IRIDIUM
15• FOS...PHOSPHORUS	36• KRN....KRYPTON	57• LNT....LANTHANUM	78• PLT....PLATINUM
16• SLF....SULFUR	37• RBD....RUBIDIUM	58• CER...CERIUM	79• GLD...GOLD
17• CLR...CHLORINE	38• STR....STRONTIUM	59• PRA...PRASEODYMIUM	80• MRC..MERCURY
18• AGN...ARGON	39• ITR.....YTTRIUM	60• NDM...NEODYMIUM	81• TLI.....THALLIUM
19• PTS....POTASSIUM	40• ZRC....ZIRCONIUM	61• PRM...PROMETHIUM	82• LDP...LEAD
20• CLC...CALCIUM	41• NBI.....NIOBIUM	62• SMR...SAMARIUM	83• BSM..BISMUTH

21• SCN...SCANDIUM	42• MLB...MOLYBDENUM	63• EUR...EUROPIUM	84• PLN...POLONIUM

THESE 3 LETTER ABBREVIATIONS, ARE THE DEFAULT,COMPUTER USEABLE, ATOMIC CHEMICAL SYMBOLS,
FOR USE IN, COMPUTER COMPLETE MOLECULAR FORMULAS and AS 3 LETTER FILE EXTENSIONS,
IN DOS, WINDOWS & APPLE, COMPUTER CHEMISTRY PROGRAMS and CHEMICAL FILiING SYSTEMS.
THE 3 LETTER SYMBOLS OF THE VERY RADIOACTIVE ATOMIC ELEMENTS, ARE SHOWN BELOW

85• AST.....ASTATINE	92• URA...URANIUM	99• EST....EINSTEINIUM	106• SBG...SEABORGIUM
86• RDO...RADON	93• NPT....NEPTUNIUM	100• FRM...FERMIUM	107• BHR...BOHRION
87• FRN....FRANCIUM	94• PLU...PLUTONIUM	101• MND..MENDELEVIUM	108• HSI.....HASSION
88• RAD....RADIUM	95• AMR...AMERICIUM	102• NBL...NOBELIUM	109• MTR...MEITNERIUM
89• ACT.....ACTINIUM	96• CRI....CURIUM	103• LRI.....LAWRENCIUM	110• DRM...DARMSTADTIUM
90• TOR....TORIUM	97• BRK...BERKELIUM	104•RTR...RUTERFORDIUM	111• RNT....ROENTGENIUM
91• PRT.....PROTACTINIUM	98• CLF....CALIFORNIUM	105•DBN...DUBNIUM	112• UUB...UNUNBION



EXACT QUANTITY, COMPLETE MOLECULAR FORMULAS, HELP US, TO ANALYZE & WEIGH
CHEMICALS WITH COMPUTERS, HERE ARE THE FORMULAS FOR HEXA-CYCLO PROPYNE.
THE RATIO FORMULA | THE COMPLETE MOLECULAR FORMULA

6 (C_3H_4) **18.CBN+24.HDR**

The Atomic Formula Writing System as it relates to Modeling the Torah Shebiksav, the 114 Chapters of the Noble Qur'an & the Consul Cube's 115 Components

THE FORMULA WRITING SYSTEM	EXPLANATORY NOTES
1.0 THIS FORMULA WRITING SYSTEM HELPS YOU, TO TELL BOTH COMPUTERS & PEOPLE, EXACTLY, HOW A CHEMICAL WAS CREATED ORIGINALLY. OR IS TO BE FABRICATED.	THIS A CHEMICAL FORMULA WRITING SYSTEM FOR THOSE, WHO WISH TO USE COMPUTERS, TO ASSIST THEM, IN CREATING ALKANE PETRO CHEMICALS.
1.1 FIRST IT TELLS THE COMPUTER: THE COMPLETE NAME OF THE CHEMICAL EXAMPLE: **PROPANE** = 3.CBN:+8.HDR: = H3C'+>CH2+'CH3	*1.1* *LATER THE COMPUTER,* *CAN RETRIEVE ALL YOUR FILES* *WITH THE NAME, PROPANE* REVIEW THE SYMBOLS, RIGHT
1.2 THEN IT TELLS THE COMPUTER: THIS CHEMICAL MUST **EQUAL =** THIS MANY ATOMS OF EACH ATOMIC ELEMENT PROPANE **=** 3.CBN:+8.HDR: = H3C'+>C2H+'CH3	*1.2* *IN THIS SYSTEM,* *THE CHEMICAL NAME* *& CHEMICAL FORMULA,* *ARE ALL ONE UNIT* *OF INTER-RELATED* *INFORMATION.*
1.3 THEN IT TELLS THE COMPUTER: THIS CHEMICAL MUST HAVE,EXACTLY , THIS MANY ATOMS OF EACH ATOMIC ELEMENT PROPANE = **3.CBN+8.HDR** = H3C'+>CH2+'CH3	*1.3* *EACH ATOMIC ELEMENT,* *HAS A 3 LETTER SYMBOL* *ONLY THESE SYMBOLS ARE* *USEABLE IN COMPUTERS*
1.4 THEN IT TELLS THE COMPUTER, THESE CHEMICAL COMPONENTS, SHALL BE JOINED TOGETHER, ACCORDING TO THESE DIRECTIONS PROPANE = 3.CBN:+8.HDR: = **H3C'+"CH2+'CH3**	*1.4* *THE CHEMICAL COMPONENT* *SYMBOLS ARE COMBINED,* *3 to 4 LETTER, NUMBER,* *& BONDING VALENCE VALUE* *SYMBOLS. AS SHOWN BELOW*

TEMPERATURE & TIMING DIRECTIONS	EXPLANATORY NOTES
1.5 THE FORMULA COMPONENTS ARE REPEATED & GIVEN CHEMICAL (CMCL) ORDER OF PROCESSING NUMBERS. **CMCL1 = H3C'** **CMCL2 = >CH2** **CMCL3 = 'CH3**	*1.5* *THE ORDER OF PROCESSING* *NUMBERS,ELIMINATE WASTE* *& ACCIDENTS, DURING THE* *SYNTHESIS OF CHEMICALS*
1.6 THE ORDER OF PROCESSING NUMBERS, AND THE FORMULA COMPONENTS ARE REPEATED AND RELATED TO THEIR SCIENTIFIC NAMES CMCL1 ~ H3C' = **REVERSE METHYL** / CMCL2 ~ >CH2 = **METHYLENE** / CMCL3 ~ 'CH3 = **METHYL** /	*1.6* *WHEN THE LISTED* *CHEMICAL COMPONENTS* *HAVE A BACK SLASH* *AFTER THEM,* *IT CREATES* *IN THE COMPUTER* *A LINE OF ACTIVITY*
1.7 THE ORDER OF PROCESSING NUMBERS, AND THE FORMULA COMPONENTS AND THEIR SCIENTIFIC NAMES ARE THEN, IS COMBINED, INTO ONE, 3 PART, CHEMICAL COMPONENT DESIGNATION CMCL1 ~ H3C' ~ REVERSE METHYL / CMCL2 ~ >CH2 ~ METHYLENE / CMCL3 ~ 'CH3 ~ METHYL /	*1.7* *THIS 3 PART* *PROCESSING DESIGNATION* *TIES THE DESIGNATION* *INTO 3 TO 6 SEPARATE* *MONITORING PROGRAMS*
1.8 THE NAMED FORMULA COMPONENTS ARE REPEATED WITH THEIR ENTRANCE TEMPERATURES CMCL1~ REVERSE METHYL @+27C^ | CMCL2 ~ METHYLENE @ 27C^ | CMCL3 ~ METHYL @ +29C^ |	*1.8* *THE VERTICAL BAR, |* *AFTER EACH COMPONENT* *TELLS THE COMPUTER,* *TO STORE THEM AS,* *SEPARATE LISTED DATA*

1.9 THEN PROCESS DIRECTIONS ARE GIVEN AFTER, THEIR 3 PART PROCESS DESIGNATION **CMCL1 ~ H3C' ~ REVERSE METHYL** 1.1~HOLD AT ENTRANCE TMP +27C^ 45 MINUTES 1.2~AGITATE CONSTANTLY **CMCL2 ~ >CH2 ~ METHYLENE** 2.1~HOLD AT ENTRANCE TMP +29C^20 HRS 2.2~INTRODUCE WITH 4.8 ATM PRESSURE CONTROLS **CMCL3 ~ 'CH3 ~ METHYL** 3.1~HOLD AT ENTRANCE TMP +33C^ 20 HRS 3.2~INTRODUCE AT 3 ATM INTO CMCL1 & CMCL2 HAVING A CONTROLLED TEMPERATURE OF 220C^	*1.9* *THE 3 PART PROCESSING* *DESIGNATION FROM 1.6* *TIES THE DESIGNATION* *INTO 3 TO 6 SEPARATE* *MONITORING PROGRAMS*

The 114 Chapters of the Noble Qur'an as they relate to the 118 Atomic Elements & the Consul Cube's 115 Components

1. AL-FATIHA (THE OPENING)
2. AL-BAQARA (THE COW)
3. AAL-E-IMRAN (THE FAMILY OF 'IMRAN, THE HOUSE OF 'IMRAN)
4. AN-NISA (WOMEN)
5. AL-MAEDA (THE TABLE, THE TABLE SPREAD)
6. AL-ANAAM (CATTLE, LIVESTOCK)
7. AL-ARAF (THE HEIGHTS)
8. AL-ANFAL (SPOILS OF WAR, BOOTY)
9. AT-TAWBA (REPENTANCE, DISPENSATION)
10. YUNUS (JONAH)
11. HUD (HUD)
12. YUSUF (JOSEPH)
13. AR-RAD (THE THUNDER)
14. IBRAHIM (ABRAHAM)
15. AL-HIJR (AL-HIJR, STONELAND, ROCK CITY)
16. AN-NAHL (THE BEE)
17. AL-ISRA (ISRA', THE NIGHT JOURNEY, CHILDREN OF ISRAEL)
18. AL-KAHF (THE CAVE)
19. MARYAM (MARY)
20. TA-HA (TA-HA)
21. AL-ANBIYA (THE PROPHETS)
22. AL-HAJJ (THE PILGRIMAGE)
23. AL-MUMENOON (THE BELIEVERS)
24. AN-NOOR (THE LIGHT)

25. AL-FURQAN (THE CRITERION, THE STANDARD)
26. ASH-SHUARA (THE POETS)
27. AN-NAML (THE ANT, THE ANTS)
28. AL-QASAS (THE STORY, STORIES)
29. AL-ANKABOOT (THE SPIDER)
30. AR-ROOM (THE ROMANS, THE BYZANTINES)
31. LUQMAN (LUQMAN)
32. AS-SAJDA (THE PROSTRATION, WORSHIP, ADORATION)
33. AL-AHZAB (THE CLANS, THE COALITION, THE COMBINED FORCES)
34. SABA (SABA, SHEBA)
35. FATIR (THE ANGELS, ORIGNATOR)
36. YA-SEEN (YA-SEEN)
37. AS-SAAFFAT (THOSE WHO SET THE RANKS, DRAWN UP IN RANKS)
38. SAD (THE LETTER SAD)
39. AZ-ZUMAR (THE TROOPS, THRONGS)
40. AL-GHAFIR (THE FORGIVER (GOD)
41. FUSSILAT (EXPLAINED IN DETAIL) ****
42. ASH-SHURA (COUNCIL, CONSULTATION)
43. AZ-ZUKHRUF (ORNAMENTS OF GOLD, LUXURY)
44. AD-DUKHAN (SMOKE)
45. AL-JATHIYA (CROUCHING)
46. AL-AHQAF (THE WIND-CURVED SANDHILLS, THE DUNES)
47. MUHAMMAD (MUHAMMAD)
48. AL-FATH (VICTORY, CONQUEST)
49. AL-HUJRAAT (THE PRIVATE APARTMENTS, THE INNER APARTMENTS)
50. QAF (THE LETTER QAF)
51. ADH-DHARIYAT (THE WINNOWING WINDS)
52. AT-TUR (THE MOUNT)
53. AN-NAJM (THE STAR)
54. AL-QAMAR (THE MOON)
55. AR-RAHMAN (THE BENEFICENT, THE MERCY GIVING)
56. AL-WAQIA (THE EVENT, THE INEVITABLE)
57. AL-HADID (THE IRON) ****
58. AL-MUJADILA (SHE THAT DISPUTETH, THE PLEADING WOMAN)
59. AL-HASHR (EXILE, BANISHMENT)
60. AL-MUMTAHINA (SHE THAT IS TO BE EXAMINED, EXAMINING HER)
61. AS-SAFF (THE RANKS, BATTLE ARRAY)
62. AL-JUMUA (THE CONGREGATION, FRIDAY)
63. AL-MUNAFIQOON (THE HYPOCRITES)
64. AT-TAGHABUN (MUTUAL DISILLUSION, HAGGLING)
65. AT-TALAQ (DIVORCE)
66. AT-TAHRIM (BANNING, PROHIBITION)
67. AL-MULK (THE SOVEREIGNTY, CONTROL)
68. AL-QALAM (THE PEN) ****
69. AL-HAAQQA (THE REALITY)
70. AL-MAARIJ (THE ASCENDING STAIRWAYS)

71. NOOH (NOOH)
72. AL-JINN (THE JINN)
73. AL-MUZZAMMIL (THE ENSHROUDED ONE, BUNDLED UP)
74. AL-MUDDATHTHIR (THE CLOAKED ONE, THE MAN WEARING A CLOAK)
75. AL-QIYAMA (THE RISING OF THE DEAD, RESURRECTION)
76. AL-INSAN (MAN)
77. AL-MURSALAT (THE EMISSARIES, WINDS SENT FORTH)
78. AN-NABA (THE TIDINGS, THE ANNOUNCEMENT)
79. AN-NAZIAT (THOSE WHO DRAG FORTH, SOUL-SNATCHERS)
80. ABASA (HE FROWNED)
81. AT-TAKWIR (THE OVERTHROWING)
82. AL-INFITAR (THE CLEAVING, BURSTING APART)
83. AL-MUTAFFIFIN (DEFRAUDING, THE CHEATS, CHEATING)
84. AL-INSHIQAQ (THE SUNDERING, SPLITTING OPEN)
85. AL-BUROOJ (THE MANSIONS OF THE STARS, CONSTELLATIONS)
86. AT-TARIQ (THE MORNING STAR, THE NIGHTCOMER)
87. AL-ALA (THE MOST HIGH, GLORY TO YOUR LORD IN THE HIGHEST)
88. AL-GHASHIYA (THE OVERWHELMING, THE PALL)
89. AL-FAJR (THE DAWN, DAYBREAK)
90. AL-BALAD (THE CITY, THIS COUNTRYSIDE)
91. ASH-SHAMS (THE SUN)
92. AL-LAIL (THE NIGHT)
93. AD-DHUHA (THE MORNING HOURS, MORNING BRIGHT)
94. AL-INSHIRAH (SOLACE, CONSOLATION, RELIEF)
95. AT-TIN (THE FIG, THE FIGTREE)
96. AL-ALAQ (THE CLOT, READ)
97. AL-QADR (POWER, FATE)
98. AL-BAYYINA (THE CLEAR PROOF, EVIDENCE)
99. AZ-ZALZALA (THE EARTHQUAKE)
100. AL-ADIYAT (THE COURSER, THE CHARGERS)
101. AL-QARIA (THE CALAMITY, THE STUNNING BLOW, THE DISASTER
102. AT-TAKATHUR (RIVALRY IN WORLD INCREASE, COMPETITION
103. AL-ASR (THE DECLINING DAY, EVENTIDE, THE EPOCH)
104. AL-HUMAZA (THE TRADUCER, THE GOSSIPMONGER)
105. AL-FIL (THE ELEPHANT)
106. QURAISH (WINTER, QURAYSH)
107. AL-MAUN (SMALL KINDNESSES, ALMSGIVING, HAVE YOU SEEN)
108. AL-KAUTHER (ABUNDANCE, PLENTY)
109. AL-KAFIROON (THE DISBELIEVERS, ATHEISTS)
110. AN-NASR (SUCCOUR, DIVINE SUPPORT)
111. AL-MASADD (PALM FIBRE, THE FLAME)
112. AL-IKHLAS (SINCERITY)
113. AL-FALAQ (THE DAYBREAK, DAWN)
114. AN-NAS (MANKIND)

The 3 Translations of the Noble Qur'an as they jointly relate to the 3 Symbols of Atomic Elements & the 3 Components of the Consul Cube

Translations of the Qur'an, Chapter 1:

AL-FATIHA (THE OPENING)

Total Verses: 7
Revealed At: MAKKA
Maududi's introduction

001.001
YUSUFALI: In the name of Allah, Most Gracious, Most Merciful.
PICKTHAL: In the name of Allah, the Beneficent, the Merciful.
SHAKIR: In the name of Allah, the Beneficent, the Merciful.
001.002
YUSUFALI: Praise be to Allah, the Cherisher and Sustainer of the worlds;
PICKTHAL: Praise be to Allah, Lord of the Worlds,
SHAKIR: All praise is due to Allah, the Lord of the Worlds.
001.003
YUSUFALI: Most Gracious, Most Merciful;
PICKTHAL: The Beneficent, the Merciful.
SHAKIR: The Beneficent, the Merciful.
001.004
YUSUFALI: Master of the Day of Judgment.
PICKTHAL: Master of the Day of Judgment,
SHAKIR: Master of the Day of Judgment.
001.005
YUSUFALI: Thee do we worship, and Thine aid we seek.
PICKTHAL: Thee (alone) we worship; Thee (alone) we ask for help.
SHAKIR: Thee do we serve and Thee do we beseech for help.
001.006
YUSUFALI: Show us the straight way,
PICKTHAL: Show us the straight path,
SHAKIR: Keep us on the right path.
001.007
YUSUFALI: The way of those on whom Thou hast bestowed Thy Grace, those whose (portion) is not wrath, and who go not astray.
PICKTHAL: The path of those whom Thou hast favoured; Not the (path) of those who earn Thine anger nor of those who go astray.
SHAKIR: The path of those upon whom Thou hast bestowed favors. Not (the path) of those upon whom Thy wrath is brought down, nor of those who go astray.

The 3 Sections of the Torah Shebiksav & Structural Components of the Judaic Synagogue as it Relates to the 3 Interpretations of the Noble Qur'an, the Chart of Atomic Elements & Consul Cube

The **Torah Shebiksav** has three parts:

- **Torah** "**The Beit Midrash or House of Study**": This is the part that was given directly to Moshe Rabbeinu (Moses our Teacher) at Mount Sinai by HaShem (God). It is made up of five books. Each book is called a *Chumash*.
    - **B'reishis** (Genesis)
    - **Shemos** (Exodus)
    - **Vayikra** (Leviticus)
    - **Bamidbar** (Numbers)
    - **Devarim** (Deuteronomy)
- **Nevi'im** (Prophets) "**The Beit Knesset or House of Assembly**": Prophets are great and saintly people who communicate with HaShem. These books (systems matrix elements) are recordings of some of what HaShem said to His prophets.
    - **Yehoshua** (Joshua)
    - **Shoftim** (Judges)
    - **Shmuel** (Samuel) - two books
    - **Melachim** (Kings) - two books
    - **Yirmiyahu** (Jeremiah)
    - **Yechezkel** (Ezekiel)
    - **Yeshayahu** (Isaiah)
    - The following twelve are combined in one book called **Trey Asar** (The Twelve):
        - **Hoshaia** (Hosea)
        - **Yoel** (Joel)
        - **Amos**
        - **Ovadiah** (Obadiah)
        - **Yonah** (Jonah)
        - **Michah** (Micah)
        - **Nachum** (Nahum)
        - **Chabakkuk** (Habakkuk)
        - **Tzefaniah** (Zephaniah)
        - **Chaggai** (Haggai)
        - **Zechariah** (Zachariah)
        - **Malachi**
- **Kesuvim** (Writings) "**The Beit Tefilah or House of Prayer**": These books were written by prophets with HaShem's guidance but are not direct prophecies.
    - **Tehillim** (Psalms)
    - **Mishlei** (Proverbs)
    - **Iyov** (Job)

        The following five books are called *Megillos*:
    - 1 **Shir HaShirim** (Song of Songs)
    - 2 **Rus** (Ruth)
    - 3 **Eichah** (Lamentations)
    - 4 **Koheles** (Eccelesiastes)

- 5 **Esther**
- **Daniel**
- **Ezra** & **Nechemiah** (Nehemiah)
- **Divrei HaYomim** (Chronicles) two books

The Hebrew name for a synagogue is "**Beit Knesset**" which means House of Assembly. It also goes by the names "**Beit Midrash**" (House of Study) and "**Beit Tefilah**" (House of Prayer). The three terms refer to the three fundamental functions of the synagogue:

House of Assembly: The synagogue is a meeting place for Jews, where they share the important facets of their lives with one another and achieve a sense of community. Judaism is a communal religion; the most important events take place in the presence of other people. Priority is given to the community and its needs and it is incumbent upon the individual to make the needs of the community his/her priority. What is more, individuals are supported by the community, and this happens most effectively when people come together with one another. The synagogue is the place where people meet to pray, study, celebrate, mourn, and socialize. Today, the synagogue is the hub of the Jewish community, the place where Jews come to be together for a variety of reasons, ranging from prayer and study to socializing.

House of Study: The chief function of the synagogue is to serve as a study house. The study of Torah and other sacred books is the backbone of Jewish observance. Study is a form of worship. It is through study that we come to know ourselves, God, and plumb the depths of our relationship with God. It is important that people study with other people, because when we study in groups, more ideas are generated and exchanged, new interpretations are born, and learning increases far beyond what any of us could accomplish sitting alone and study by ourselves. Educational programs for Jews of all ages -- from infants to the elderly -- abound in synagogues today because learning is a lifelong Jewish commitment.

House of Prayer: Another function of the synagogue is to serve as the locus where people meet for prayer. Judaism mandates prayer three times each day. A minyan (quorum of 10 adults) is required to hold a full prayer service because the priority of community is so strong in Judaism. Hence a central meeting place facilitates communal prayer services. Prayer, like study, are a mode of worship, a way to serve God. Prayer also binds the community together, and serves the individual's spiritual needs. Today, the synagogue is the locus for most prayer services, with the exception of shiva minyanim (prayer services convened in the home of someone who is sitting shiva -- the first seven days of mourning following the death of a loved one). Since prayer services incorporate study and celebration, the three functions of the synagogue reflected in the three names, come together.

The Software Engineering Initiative as its 115 Principle Components relates to the Periodic Table of Atomic Elements, the Consul Cube, and the Geography, Earth and Environmental Sciences Taxonomy

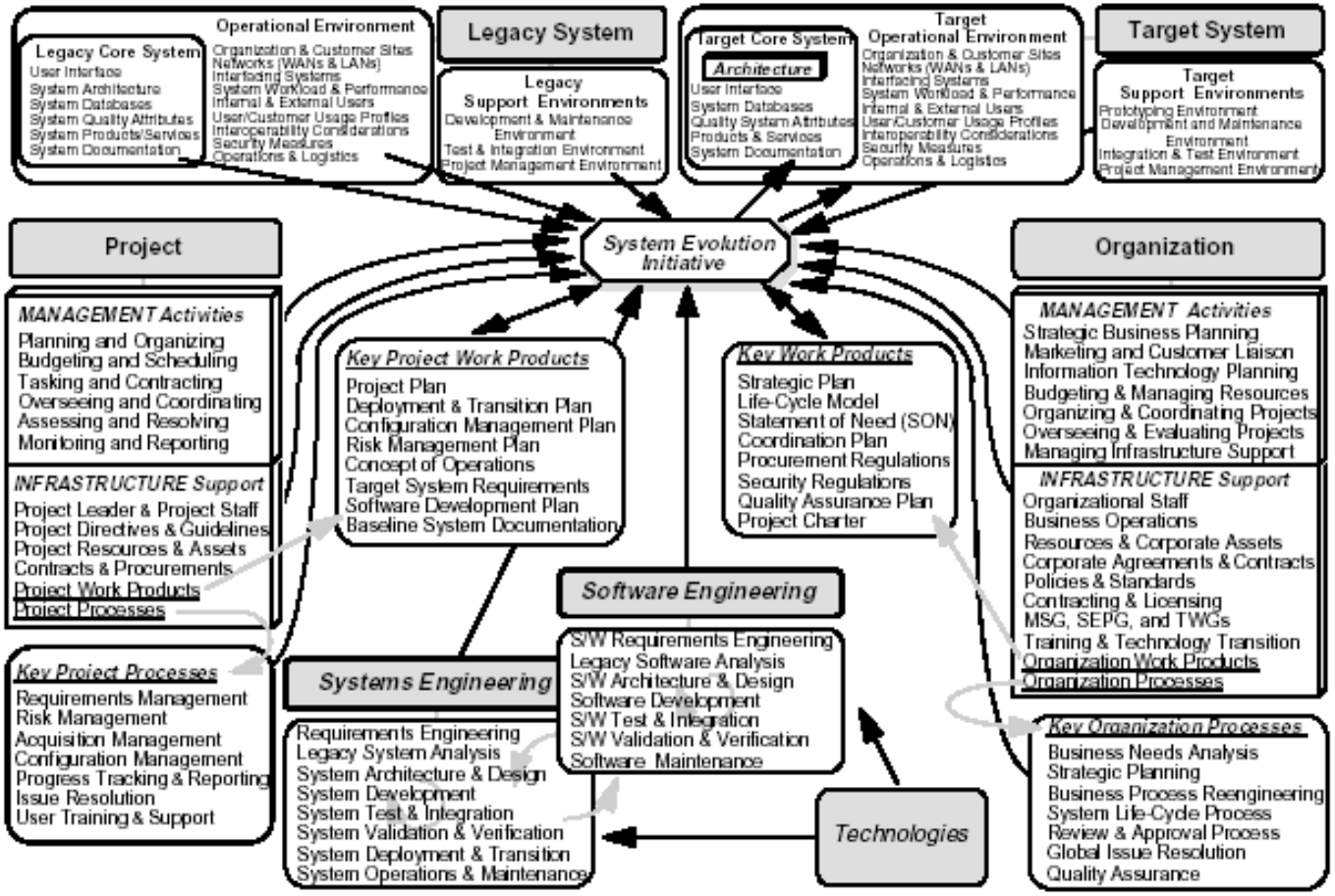


Figure 12: An Expanded View of the Framework Elements

The 115 Sections of the Geography, Earth and Environmental Sciences Taxonomy as it relates to the Table of Atomic Elements & the Consul Cube

Planning and Preparation (General)

Subject Benchmarks
Programme Design
Curriculum Design
Module Design
Exemplars

Approaches to Learning and Teaching (General)

Constructivism
Student Centred Learning
Resource Based Learning
Independent Learning
Flexible Learning
Distance Learning
Summer Schools
Surface Learning
Deep Learning
Experiential Learning
Collaborative Learning
Life long Learning
Cross-disciplinary Learning
Work-based Learning
Problem-based Learning

Teaching, Learning, and Assessment Methods (General)

Demonstrations
Discussion
Drills Practice
Fieldwork
Group Work
Lectures
Mentoring
Peer Teaching
Seminars
Tutorials
Work Experience
Workshops
Role Play

Approaches to Assessment (General)

Formative Assessment
Summative Assessment
Peer Assessment
Self Assessment
Continuous Assessment
Group Assessment
Computer Aided Assessment CAA / Computer Based Assessment CBA

Professionalism of Teaching (General)

Staff Development
Educational/Pedagogic Research
Evaluation/Reflective Practice of Teaching

Issues in Higher Education (general)
Student Recruitment
Student Retention and Transition
Accessibility and SENDA
Widening Participation
Academic Quality Review
Linking Teaching and Research
Legal and Ethical Issues

Educational Technology / E-Learning (General)

Computer Mediated Communication (general)
Moderation
Synchronous Communication
Asynchronous Communication

Virtual Learning Environments VLEs (general)
Managed Learning Environments MLEs
Virtual Laboratories
Virtual Fieldwork

Internet (general)
Internet Searching / Web Browsing / Web surfing
Internet Resources / Web resources

Simulations Laboratory Work E-tutoring Theses Dissertations Essays Journals Oral Presentations Poster Presentations Portfolios Reports Examinations Websites	Courseware (Educational Software) Computer Aided Assessment CAA / Computer Based Assessment CBA Computer Modelling Computer Simulation Educational Multimedia Embedding Technology

Outcomes of Education (General) Knowledge Understanding Attitudes and Values Creativity Research Professional Development Portfolio Employability **Key Skills (General)** Critical Thinking Decision Making Skills Information Literacy Job Skills Numeracy Communication Practical (inc Lab and Field) Skills Problem Solving Skills Research Skills Study Skills Teaching Skills Teamwork Skills Technological Literacy Thinking Skills	**Subject Based Skills (General)** GIS Graphicacy Data Analysis Data Presentation Cartographic Skills Mapping Field Skills Experimental Design Survey Design Site Evaluation Statistical Methodologies Recording Skills Report Writing Skills

The Chromosomal Evolution of Systems Development within a Genetic-based Consultative Planning & Design Effort

The Application of Chromosomal Base-pairs

When considering a format from which systems development may begin through the application of human chromosomes, we must first start-off with the 23 base-pairs of chromosomes that are key to effective human development. Each chromosome, as they are graphically represented, will contain a number of pixels whose numerical layout is directly linked to a grammatical spread-sheet. The grammatical spread-sheet is a unique database application that individually houses a series of evaluated and alphanumerically labeled words that are used to describe a person, place, thing or process (e.g., the Investigative Profile). Furthermore, in order to insure that the information stored within these databases is secure, each word within them shall be encoded with a DNA format by which the alphabet of human languages shall be comprised of genetic lettering. As a whole, these databases are elemental components of an inventory factor that is manipulated by ERP or MRP logistical formulas. Whereas, the primary goal is not the strategic move or placement of supplies, but the development of speech patterns that are best suited to resolve personal and/or business related problems. This goal/objective is achieved by finding the statistical mean of the evaluated issues at hand, and then from there, applying synonymous resolutions that best suit the problem-solving measure(s) of redundant interdepartmental issues. The ease of this task is simplified through inputting a description of what has actually occurred against what was forecasted or expected to occur at a given point and time in procedural implementation.

The Depiction of Sequencing the Genome Maps

Overall, additional procedures are needed in order to achieve Chromosomal Evolution in Systems Development. Foremost, is that as the design of systems chromosomes are created, their purposes are that of compressing the data of an entire organization into just 23 base-pairs of genetically encoded drawings. Secondly, as the visual depiction of chromosomes progresses from their graphical portion to a layout of their designated alphanumeric sequences, these subsequent titles shall instead be used to represent a series of task related routines. Then, from that point on as the series continues, a set of subroutines. The third segment relating to the description of human chromosomes, are those lines drawn to the subordinate areas of genome maps. These lines will be hyperlinked to a PERT network diagram, whose layout reflect the procedures of increasing or decreasing the strategic value of stored or implemented information. While, simultaneously integrating and manipulating the comprehensive grade level of information or those tasks listed within the grammatical (alphanumeric) databases used in problem-solving measures of effectiveness. The grade level region is reflected in the proceeding section of the genome map as 1 to 15B. Finally, the last area of the genome maps shall be used by this program to reflect the numerical color schemes that are involved in tracing those subject matters affecting interdepartmental relationships.

Infusing the Chromosomal Base-pairs

Once the proceeding genome sequences have been mapped and implemented, the next phase necessitates infusing the task-based P&D chromosomes into the input range of the **Formula System**. Conducive to the **Upper Levels** within the formula system itself, rest a succession of genetically & statistically based process diagrams that are representative of approximately 48 matrix cells. These matrix cells overlap and operate in unison to the cellular foundation of the universal map containing the initial human genetic sequences or codons. The basic premise of this concept is to have alphanumeric database structures, and the entire data set within them, mimic a number of successive genetic configurations. This process will establish an initial or standardized base from which task related processes & procedures are biologically represented, encoded and manipulated in order to transform single words into full systems development (e.g., Autonomous Agents or Autonomous Enterprise Work Architectures). From there, the encoded 23 base-pair chromosomes will be reflective of the **Change Equation**, whose subject matters (Integrated Method Structure) total 23 transceivable sequences as they are processed through-out the **Lower Levels** of the formula system, and the DOSA or IAOA formats as a whole. Therefore, as the Autonomous Agent(s) or Autonomous Enterprise Work Architecture(s) retrieves and stores compressed information from within its distributed databases as base-pair chromosomes, and at a later time reads those chromosomes from within the Formula System itself. It shall acquire a host of information that a set of related issues may deem viable inside the processes of strategic investigation and procedural implementation. Of which, is achieved with little or no human intervention, or involved human redundancy in the discovery processes of procedural implementation or adaptation.

Technological Interrelationships

The technologies of Nascent Applied Methods & Endeavors lays the foundation for a unique set of protocols that are deeply rooted in an internet-based operating system (DOSA). The DOSA format incorporates an integrated autonomous office application (IAOA), distributed artificial life programming (DALP), autonomous enterprise work architectures (EWA), and a generic formula system that manipulates these knowledge-worker-systems into a new standardized series of genetically related information processing sequences. An additional feature of NAME's technologies is that it accommodates multiple pre-existing operating systems or user applications into one operational format. The initial premise of this process is to avoid having NAME's subcontractors and their immediate customer-base spend an enormous amount of time, effort and money into learning or reprogramming their existing hardware and software technologies. The secondary proposition of this process is for NAME to avoid infringing upon the immediate market share of pre-existing applications of standardized technology releases from other companies (i.e., Microsoft, Oracle, Sun Microsystems, Yahoo, Excite, etc.).

Final Comments

At the occurrence of achieving those factors related to Chromosomal Evolution in Systems Development. The next and final phase concerns the building blocks of conceptual or educational development. This process consists of actualizing a series of biological terms that facilitates physiological analogies in strategic problem analysis and solution implementation.

This is an abstractive course of action that will first mandate and embody a selective number of associative DOT job definitions. Upon perfecting this option, the next step involves formatting the definition(s) in accordance to the **MAN** synopsis listed as Appendix – **D**. From that point on, through a process of virtual biological cloning, a full breast of new technologies associated with problem solving measures of effectiveness shall be brought to bear upon the following premises:

The IBOS Format for Initializing Virtual Biological Cloning

1) **Male(s)** [Equation factor (+/-). Weighed instructions for increasing/decreasing functions or algebraic foundation for initializing conceptual development].

    a. **Male Sex Organ(s)** [Affiliate/Delivery mechanism of fractional equation for initiating cellular recombination. Modes of delivery [Voluntary/Involuntary]].

2) **Female(s)** [Equation factor (+). Weighed instructions for increasing/decreasing functions or algebraic foundation for receiving & formatting conceptual development].

    a. **Female Sex Organ(s)** [Conveyance/Receptacle mechanism of fractional equation for illuminating cellular recombination. Modes of reception [Voluntary/Involuntary]].

Virtual Biological Development

1) **Male(s)**. Concept)ion/Educational Operations **(DALP)**. Developmental Reasoning/Social Intercourse/Integrated Direction.)

2) **Female(s)**. Concept)ion/Educational Operations **(DALP)**. Developmental Reasoning/Social Intercourse/Integrated Direction.)

3) **Maturation/Aggregation**. Enterprise work architectural engineering/Autonomous agent formatting.

4) **Birth**. Launching procedural implementation.

5) **Growth [Issues]**. Input/Output through reactionary networking **(DOSA)**. Biographic life.

6) **Death**. Functional postponement.

    a. **By murder or accident**. Involuntary completion of functional activities or abrupt augmentations. Sociological approaches or methods.

    b. **By suicide**. Voluntary completion of functional activities or abrupt disassociation. Psychological approaches or methods.

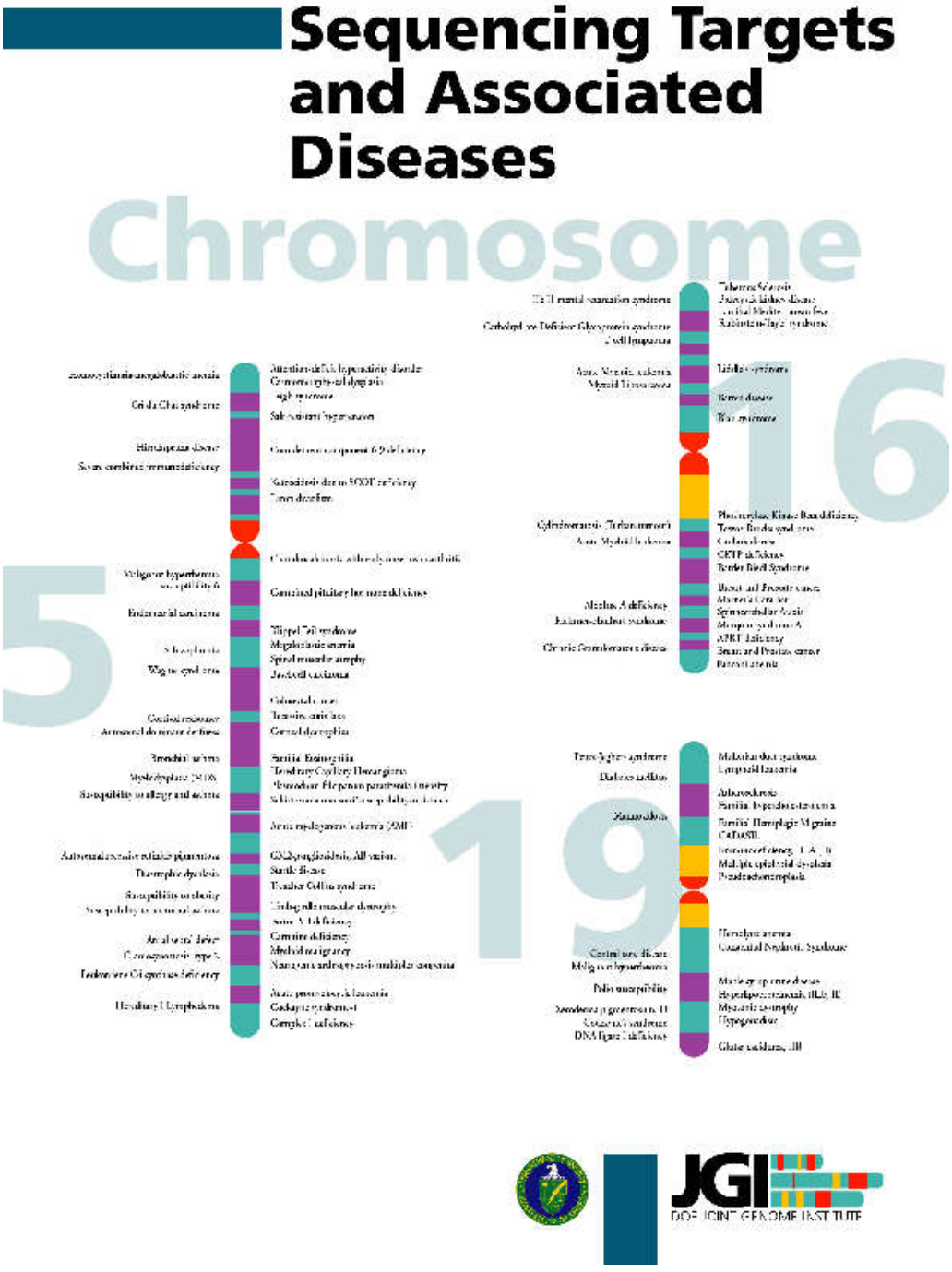
    c. **By disease**. [Micro]scopic infections. Micro[organic] destruction. Philosophical approaches or methods.

    d. **By natural causes**. Failure of adequate support measures or mechanisms. Physiological approaches or methods.

7) **Conceptual Resurrection**. Regenerative implementation of previously evaluated or stored purposeful hierarchies whose format consists of integrated bodies of routines/subroutines into persons, places or things **(IAOA)**.

Alpha Chromosomes

Disease Histogram of Chromosomes

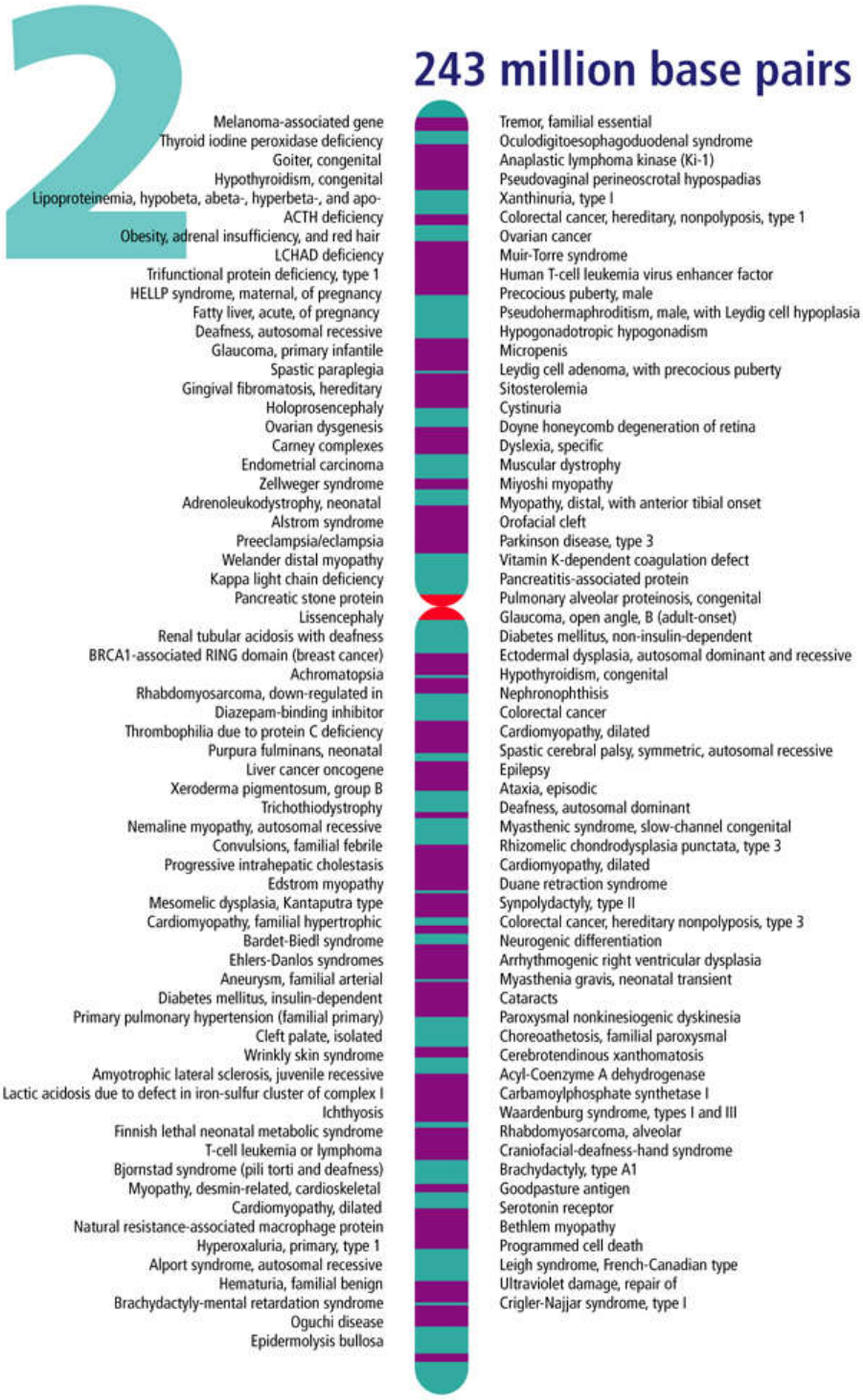


1

246 million base pairs

Cataracts
Malignant transformation suppression
Ehlers-Danlos syndrome, type VI
Glaucoma, primary infantile
Hirschsprung disease, cardiac defects
Schwartz-Jampel syndrome
Hypophosphatasia, infantile, childhood
Breast cancer, ductal
Cutaneous malignant melanoma/dysplastic nevus
p53-related protein
Serotonin receptors
Schnyder crystalline corneal dystrophy
Kostmann neutropenia
Oncogene MYC, lung carcinoma-derived
Deafness, autosomal dominant
Porphyria
Epiphyseal dysplasia, multiple, type 2
Intervertebral disc disease
Lymphoma, non-Hodgkin
Breast cancer, invasive intraductal
Colon adenocarcinoma
Maple syrup urine disease, type II
Atrioventricular canal defect
Fluorouracil toxicity, sensitivity to
Zellweger syndrome
Stickler syndrome, type III
Marshall syndrome
Stargardt disease
Retinitis pigmentosa
Cone-rod dystrophy
Macular dystrophy, age-related
Fundus flavimaculatus
Hypothyroidism, nongoitrous
Exostoses, multiple
Pheochromocytoma
Psoriasis susceptibility
Limb-girdle muscular dystrophy, autosomal dominant
Pycnodysostosis
Vohwinkel syndrome with ichthyosis
Erythrokeratoderma, progressive symmetric
Anemia, hemolytic
Elliptocytosis
Pyropoikilocytosis
Spherocytosis, recessive
Schizophrenia
Lupus nephritis, susceptibility to
Migraine, familial hemiplegic
Emery-Dreifuss muscular dystrophy
Cardiomyopathy, dilated
Lipodystrophy, familial partial
Dejerine-Sottas disease, myelin P-related
Hypomyelination, congenital
Nemaline myopathy, autosomal dominant
Lupus erythematosus, systemic, susceptibility
Neutropenia, alloimmune neonatal
Viral infections, recurrent
Antithrombin III deficiency
Atherosclerosis, susceptibility to
Glaucoma
Tumor potentiating region
Nephrotic syndrome
Sjogren syndrome
Coagulation factor deficiency
Alzheimer disease
Cardiomyopathy
Factor H deficiency
Membroproliferative glomerulonephritis
Hemolytic-uremic syndrome
Nephropathy, chronic hypocomplementemic
Epidermolysis bullosa
Popliteala pterygium syndrome
Ectodermal dysplasia/skin fragility syndrome
Usher syndrome, type 2A
Kenny-Caffey syndrome
Diphenylhydantoin toxicity

Homocystinuria
Neuroblastoma (neuroblastoma suppressor)
Rhabdomyosarcoma, alveolar
Neuroblastoma, aberrant in some
Exostoses, multiple-like
Opioid receptor
Hyperprolinemia, type II
Bartter syndrome, type 3
Prostate cancer
Brain cancer
Charcot-Marie-Tooth neuropathy
Muscular dystrophy, congenital
Erythrokeratodermia variabilis
Deafness, autosomal dominant and recessive
Glucose transport defect, blood-brain barrier
Hypercholesterolemia, familial
Neuropathy, paraneoplastic sensory
Muscle-eye-brain disease
Medulloblastoma
Basal cell carcinoma
Corneal dystrophy, gelatinous drop-like
Leber congenital amaurosis
Retinal dystrophy
B-cell leukemia/lymphoma
Lymphoma, MALT and follicular
Mesothelioma
Germ cell tumor
Sezary syndrome
Colon cancer
Neuroblastoma
Glycogen storage disease
Osteopetrosis, autosomal dominant, type II
Waardenburg syndrome, type 2B
Vesicoureteral reflux
Choreoathetosis/spasticity, episodic (paroxysmal)
Hemochromatosis, type 2
Leukemia, acute
Gaucher disease
Medullary cystic kidney disease, autosomal dominant
Renal cell carcinoma, papillary
Insensitivity to pain, congenital, with anhidrosis
Medullary thyroid carcinoma
Hyperlipidemia, familial combined
Hyperparathyroidism
Lymphoma, progression of
Porphyria variegata
Hemorrhagic diathesis
Thromboembolism susceptibility
Systemic lupus erythematosus, susceptibility
Fish-odor syndrome
Prostate cancer, hereditary
Chronic granulomatous disease
Macular degeneration, age-related
Epidermolysis bullosa
Chitotriosidase deficiency
Pseudohypoaldosteronism, type II
Hypokalemic periodic paralysis
Malignant hyperthermia susceptibility
Glomerulopathy with fibronectin deposits
Metastasis suppressor
Measles, susceptibility to
van der Woude syndrome (lip pit syndrome)
Rippling muscle disease
Hypoparathyroidism-retardation-dysmorphism syndrome
Ventricular tachycardia, stress-induced polymorphic
Fumarase deficiency
Chediak-Higashi syndrome
Muckle-Wells syndrome
Zellweger syndrome
Adrenoleukodystrophy, neonatal
Endometrial bleeding-associated factor
Left-right axis malformation
Prostate cancer, hereditary
Chondrodysplasia punctata, rhizomelic, type 2


2
243 million base pairs
Melanoma-associated gene
Thyroid iodine peroxidase deficiency
Goiter, congenital
Hypothyroidism, congenital
Lipoproteinemia, hypobeta, abeta-, hyperbeta-, and apo-
ACTH deficiency
Obesity, adrenal insufficiency, and red hair
LCHAD deficiency
Trifunctional protein deficiency, type 1
HELLP syndrome, maternal, of pregnancy
Fatty liver, acute, of pregnancy
Deafness, autosomal recessive
Glaucoma, primary infantile
Spastic paraplegia
Gingival fibromatosis, hereditary
Holoprosencephaly
Ovarian dysgenesis
Carney complexes
Endometrial carcinoma
Zellweger syndrome
Adrenoleukodystrophy, neonatal
Alstrom syndrome
Preeclampsia/eclampsia
Welander distal myopathy
Kappa light chain deficiency
Pancreatic stone protein
Lissencephaly
Renal tubular acidosis with deafness
BRCA1-associated RING domain (breast cancer)
Achromatopsia
Rhabdomyosarcoma, down-regulated in
Diazepam-binding inhibitor
Thrombophilia due to protein C deficiency
Purpura fulminans, neonatal
Liver cancer oncogene
Xeroderma pigmentosum, group B
Trichothiodystrophy
Nemaline myopathy, autosomal recessive
Convulsions, familial febrile
Progressive intrahepatic cholestasis
Edstrom myopathy
Mesomelic dysplasia, Kantaputra type
Cardiomyopathy, familial hypertrophic
Bardet-Biedl syndrome
Ehlers-Danlos syndromes
Aneurysm, familial arterial
Diabetes mellitus, insulin-dependent
Primary pulmonary hypertension (familial primary)
Cleft palate, isolated
Wrinkly skin syndrome
Amyotrophic lateral sclerosis, juvenile recessive
Lactic acidosis due to defect in iron-sulfur cluster of complex I
Ichthyosis
Finnish lethal neonatal metabolic syndrome
T-cell leukemia or lymphoma
Bjornstad syndrome (pili torti and deafness)
Myopathy, desmin-related, cardioskeletal
Cardiomyopathy, dilated
Natural resistance-associated macrophage protein
Hyperoxaluria, primary, type 1
Alport syndrome, autosomal recessive
Hematuria, familial benign
Brachydactyly-mental retardation syndrome
Oguchi disease
Epidermolysis bullosa
Tremor, familial essential
Oculodigitoesophagoduodenal syndrome
Anaplastic lymphoma kinase (Ki-1)
Pseudovaginal perineoscrotal hypospadias
Xanthinuria, type I
Colorectal cancer, hereditary, nonpolyposis, type 1
Ovarian cancer
Muir-Torre syndrome
Human T-cell leukemia virus enhancer factor
Precocious puberty, male
Pseudohermaphroditism, male, with Leydig cell hypoplasia
Hypogonadotropic hypogonadism
Micropenis
Leydig cell adenoma, with precocious puberty
Sitosterolemia
Cystinuria
Doyne honeycomb degeneration of retina
Dyslexia, specific
Muscular dystrophy
Miyoshi myopathy
Myopathy, distal, with anterior tibial onset
Orofacial cleft
Parkinson disease, type 3
Vitamin K-dependent coagulation defect
Pancreatitis-associated protein
Pulmonary alveolar proteinosis, congenital
Glaucoma, open angle, B (adult-onset)
Diabetes mellitus, non-insulin-dependent
Ectodermal dysplasia, autosomal dominant and recessive
Hypothyroidism, congenital
Nephronophthisis
Colorectal cancer
Cardiomyopathy, dilated
Spastic cerebral palsy, symmetric, autosomal recessive
Epilepsy
Ataxia, episodic
Deafness, autosomal dominant
Myasthenic syndrome, slow-channel congenital
Rhizomelic chondrodysplasia punctata, type 3
Cardiomyopathy, dilated
Duane retraction syndrome
Synpolydactyly, type II
Colorectal cancer, hereditary nonpolyposis, type 3
Neurogenic differentiation
Arrhythmogenic right ventricular dysplasia
Myasthenia gravis, neonatal transient
Cataracts
Paroxysmal nonkinesiogenic dyskinesia
Choreoathetosis, familial paroxysmal
Cerebrotendinous xanthomatosis
Acyl-Coenzyme A dehydrogenase
Carbamoylphosphate synthetase I
Waardenburg syndrome, types I and III
Rhabdomyosarcoma, alveolar
Craniofacial-deafness-hand syndrome
Brachydactyly, type A1
Goodpasture antigen
Serotonin receptor
Bethlem myopathy
Programmed cell death
Leigh syndrome, French-Canadian type
Ultraviolet damage, repair of
Crigler-Najjar syndrome, type I

3

199 million base pairs

von Hippel-Lindau syndrome
Renal cell carcinoma
Fanconi anemia, complementation group D
Biotinidase deficiency
Xeroderma pigmentosum, complementation group C
Cardiomyopathy, dilated, autosomal dominant
Endplate acetylcholinesterase deficiency
Arrhythmogenic right ventricular dysplasia
Teratocarcinoma-derived growth factor
Hepatoblastoma
Pilomatricoma
Ovarian carcinoma, endometrioid type
Hypobetalipoproteinemia, familial
GM1-gangliosidosis
Mucopolysaccharidosis
BRCA1 associated protein (breast cancer)
Hemolytic anemia
Septooptic dysplasia
Progressive external ophthalmoplegia, type 2
Larsen syndrome, autosomal dominant
HIV infection, susceptibility/resistance to
Ichthyosiform erythroderma, congenital
Long QT syndrome
Brugada syndrome
Heart block, progressive and nonprogressive
Deafness, autosomal recessive
Waardenburg syndrome
Tietz syndrome
Glycogen storage disease
Dementia, familial, nonspecific
Pituitary hormone deficiency, combined
Thyrotropin-releasing hormone deficiency
Deafness, autosomal recessive
Hypomagnesemia, primary
Tremor, familial essential
Charcot-Marie-Tooth neuropathy
Malignant hyperthermia susceptibility
Hypocalciuric hypercalcemia, type I
Neonatal hyperparathyroidism
Hypocalcemia, autosomal dominant
Atransferrinemia
Propionicacidemia, type II or pccB
Hailey-Hailey disease
Retinitis pigmentosa, autosomal dominant and recessive
Night blindness, congenital stationery, rhodopsin-related
Cataracts, juvenile-onset and congenital
Common acute lymphocytic leukemia antigen
Blepharophimosis, epicanthus inversus and ptosis type 1
Hemosiderosis, systemic
Sucrose intolerance
Cerebral cavernous malformations
Myelodysplasia syndrome
Apnea, postanesthetic
Ovarian cancer
Megakaryocyte growth and development factor
Thrombocythemia, essential
Peroxisomal bifunctional enzyme deficiency
Thrombophilia due to HRG deficiency
Leukoencephalopathy with vanishing white matter
Lipoma-preferred-partner gene fused with HMGIC

Moyamoya disease
Muscular dystrophy, limb-girdle, type IC
Obesity, severe
Diabetes mellitus, insulin-resistant
Marfan-like connective tissue disorder
Thyroid hormone resistance
Usher syndrome, type IIB
Pseudo-Zellweger syndrome
Lung cancer, small-cell
Colon cancer
Deleted in lung and esophageal cancer
Metaphyseal chondrodysplasia, Murk Jansen type
Carnitine-acylcarnitine translocase (deficiency)
Epidermolysis bullosa
Colorectal cancer, hereditary nonpolyposis, type 2
Turcot syndrome with glioblastoma
Muir-Torre family cancer syndrome
Hyperglycinemia, nonketotic
Pancreatic cancer
Spinocerebellar ataxia
Pituitary ACTH-secreting adenoma
Ventricular tachycardia, idiopathic
Night blindness, congenital stationary
T-cell leukemia translocation altered gene
Wernicke-Korsakoff syndrome, susceptibility to
Bardet-Biedl syndrome
Nonpapillary renal carcinoma
Protein S deficiency
Ventricular, skeletal, slow
Cardiomopathy, hypertrophic
Myotonic dystrophy
Coproporphyria
Harderoporphyrinuria
Oroticaciduria
Neuropathy, hereditary motor and sensory, Okinawa type
Dopamine receptor
Psoriasis susceptibility
Moebius syndrome
Alkaptonuria
Glaucoma, primary open angle
Hypertension, essential
Usher syndrome (Finland)
Nephronophthisis, adolescent
Ataxia telangiectasia
Short stature
Myeloid leukemia factor, acute
Ectropic viral integration site (oncogene EVI1)
3q21q26 syndrome
Encephalopathy, familial, with neuroserpin inclusion bodies
Diabetes mellitus, noninsulin-dependent
Fanconi-Bickel syndrome
Lymphomas
Eukaryotic translation initiation factor (squamous cell lung cancer)
Limb-mammary syndrome
Tumor protein p63
Ectrodactyly, ectodermal dysplasia, and cleft lip/palate syndrome
Optic atrophy
Lipoma
Bernard-Soulier syndrome, type C melanoma-associated

4

191 million base pairs

Cherubism (familial benign giant-cell tumor of the jaw)
Dopamine receptor
Huntington disease
Night blindness, congenital stationary, type 3
Retinitis pigmentosa, autosomal recessive
Retinal degeneration, autosomal recessive
Wolfram syndrome
Craniosynostosis, Adelaide type
Phenylketonuria
Parkinson disease, familial
Pituitary tumor-transforming gene
Stargardt disease
Dentin dysplasia, Shields type II
Leukemia, acute myeloid
Periodontitis, juvenile
Muscular dystrophy, limb-girdle, type 2E
Melanoma growth-stimulating activity
Hyper-IgE syndrome
Renal tubular acidosis
Mucolipidosis
Lymphocytic leukemia, acute T-cell
Alcoholism, susceptibility to
Wolfram syndrome
Sclerotylosis
Huriez syndrome
Rieger syndrome
Iridogoniodysgenesis syndrome
Severe combined immunodeficiency
Afibrinogenemia
Anterior segment mesenchymal dysgenesis
Tryptophan oxygenase
Aspartylglucosaminuria
Hepatitis B virus integration site
Hepatocellular carcinoma
Progressive external ophthalmoplegia, type 3
Coagulation factor XI
Facioscapulohumeral muscular dystrophy
Eutropenia, neonatal alloimmune
Fletcher factor

Deafness, autosomal dominant
Achondroplasia
Hypochondroplasia
Thanatophoric dysplasia, types I and II
Crouzon syndrome with acanthosis nigricans
Muencke syndrome
Mucopolysaccharidosis
Wolf-Hirschhorn syndrome
Hypodontia
Dopamine receptor
Ellis-van Creveld syndrome
Weyers acrodental dysostosis
Huntington-like neurodegenerative disorder
Retinitis pigmentosa, autosomal recessive
Psoriasis susceptibility
Analbuminemia
Amelogenesis imperfecta
Piebaldism
Mast cell leukemia
Mastocytosis with associated hematologic disorder
Germ cell tumors
Dentinogenesis imperfecta
Myeloid/lymphoid or mixed-lineage leukemia
Parkinson disease, type 1
Polycystic kidney disease, adult, type II
Hypogonadotropic hypogonadism
Abetalipoproteinemia
Mannosidosis, beta
C3b inactivator deficiency
Long QT syndrome with sinus bradycardia
Fibrodysplasia ossificans progressiva
Fibrinogenemia
Amyloidosis, hereditary renal
Hair color, red
Pseudohypoaldosteronism type I, autosomal dominant
Glutaricaciduria, type IIC
Hypercalciuria
Beukes familial hip dysplasia
Facioscapulohumeral muscular dystrophy region

5

181 million base pairs

Dopamine transporter
Attention-deficit hyperactivity disorder, susceptibility to
Cri-du-chat syndrome, mental retardation in
Chondrocalcinosis
Taste receptor
Alpha-methylacyl-CoA racemase deficiency
Differentially expressed in ovarian cancer
Ketoacidosis
Leukemia inhibitory factor receptor
Myopathy, distal, with vocal cord and pharyngeal weakness
Molybdenum cofactor deficiency, type B
Endometrial carcinoma
Klippel-Feil syndrome
Anemia, megaloblastic
Sandhoff disease
Spinal muscular atrophy, juvenile
X-ray repair
Convulsions, familial febrile
Adenomatous polyposis coli
Gardner syndrome
Colorectal cancer
Desmoid disease
Turcot syndrome
Ehlers-Danlos syndromes
Neonatal alloimmune thrombocytopenia
Myelodysplastic syndrome
Limb-girdle muscular dystrophy, autosomal dominant
Deafness
Bronchial hyperresponsiveness (bronchial asthma)
Hemangioma, capillary infantile
Spinocerebellar ataxia
Macrocytic anemia
Gastric cancer
Non small-cell lung cancer
Retinitis pigmentosa, autosomal recessive
Charcot-Marie-Tooth neuropathy
Netherton syndrome
Treacher Collins-Franceschetti syndrome
Pituitary tumor-transforming gene
Coagulation factor XII (Hageman factor)
Myeloid malignancy, predisposition to
Craniosynostosis, type 2
Parietal foramina
Leukotriene C4 synthase deficiency
Dopamine receptor
Hermansky-Pudlak syndrome

Homocystinuria-megaloblastic anemia, cbl E type
Craniometaphyseal dysplasia
Leigh syndrome
Polycystic ovary syndrome
Hirschsprung disease
Severe combined immunodeficiency
Dwarfism
Malignant hyperthermia susceptibility
Pituitary hormone deficiency
Cytotoxic T-lymphocyte-associated serine esterase
Hanukah factor serine protease
Maroteaux-Lamy syndrome
Serotonin receptor
Schizophrenia susceptibility locus
Wagner syndrome
Erosive vitreoretinopathy
Basal cell carcinoma
Obesity with impaired prohormone processing
Diphtheria toxin receptor
Contractural arachnodactyly, congenital
Cutis laxa, recessive, type I
Deafness
Cortisol resistance
Corneal dystrophy
Eosinophilia, familial
Serotonin receptor
Schistosoma mansoni infection, susceptibility/resistance to
Natural killer cell stimulatory factor-2
GM2-gangliosidosis, AB variant
Startle disease, autosomal dominant and recessive
Diastrophic dysplasia
Atelosteogenesis
Achondrogenesis
Epiphyseal dysplasia, multiple
Asthma, nocturnal, susceptibility to
Obesity, susceptibility to
Muscular dystrophy, limb-girdle, type 2F
Carnitine deficiency, systemic primary
Atrial septal defect with atrioventricular conduction defects
Arthrogryposis multiplex congenital, neurogenic
Leukemia, acute promyelocytic, NPM/RARA type
Vascular endothelial growth factor receptor
Lymphedema, hereditary
Cockayne syndrome
Pancreatitis, hereditary

6

170 million base pairs

Iridogoniodysgenesis
Anterior segment mesenchymal dysgenesis
Rieger anomaly
Axenfeld anomaly
Coagulation factor XIII
Keratosis palmoplantaris striata
Spinocerebellar ataxia
Schizophrenia susceptibility locus
Maple syrup urine disease, type Ib
Bare lymphocyte syndrome, type I
Atrial septal defect, secundum type
Adrenal hyperplasia, congenital
Renal glucosuria
Beryllium disease, chronic, susceptibility to
Leukemia, pre-B-cell transcription factor
Tumor necrosis factor (cachectin)
Malaria, cerebral, susceptibility to
Retinitis pigmentosa
Platelet-activating factor
Asthma and atopy, susceptibility to
Peroxisomal biogenesis disorder
Anemia, hemolytic, Rh-null, suppressor type
Methylmalonicaciduria, mutase deficiency type
Hemolytic anemia
Char syndrome
Gluten-sensitive enteropathy (celiac disease)
Cone-rod dystrophy
Inflammatory bowel disease
Mixed polyposis syndrome, hereditary
Leber congenital amaurosis, type V
Serotonin receptors
Macular dystrophy, retinal, North Carolina type
Obesity, severe
Diabetes mellitus, insulin-dependent
Muscular dystrophy, congenital merosin-deficient
Arthropathy, progressive pseudorheumatoid, of childhood
Rhizomelic chondrodysplasia punctata, type 1
Deafness
Cardiomyopathy, dilated, autosomal dominant
Human immunodeficiency virus type I susceptibility
Epilepsy, myoclonic, Lafora type
Opioid receptor
Estrogen receptor
Breast cancer
Estrogen resistance
Insulin-like growth factor-2 receptor
Hepatocellular carcinoma
Tumorigenicity, suppression of
Loss of heterozygosity, ovarian
Ovarian cancer, serous
Myeloid/lymphoid or mixed-lineage leukemia
Pancreatic beta cell, agenesis of
uniparental disomy
Conjunctivitis, ligneous
Coronary artery disease, susceptibility to
Complex neurologic disorder
Xeroderma pigmentosum, variant type

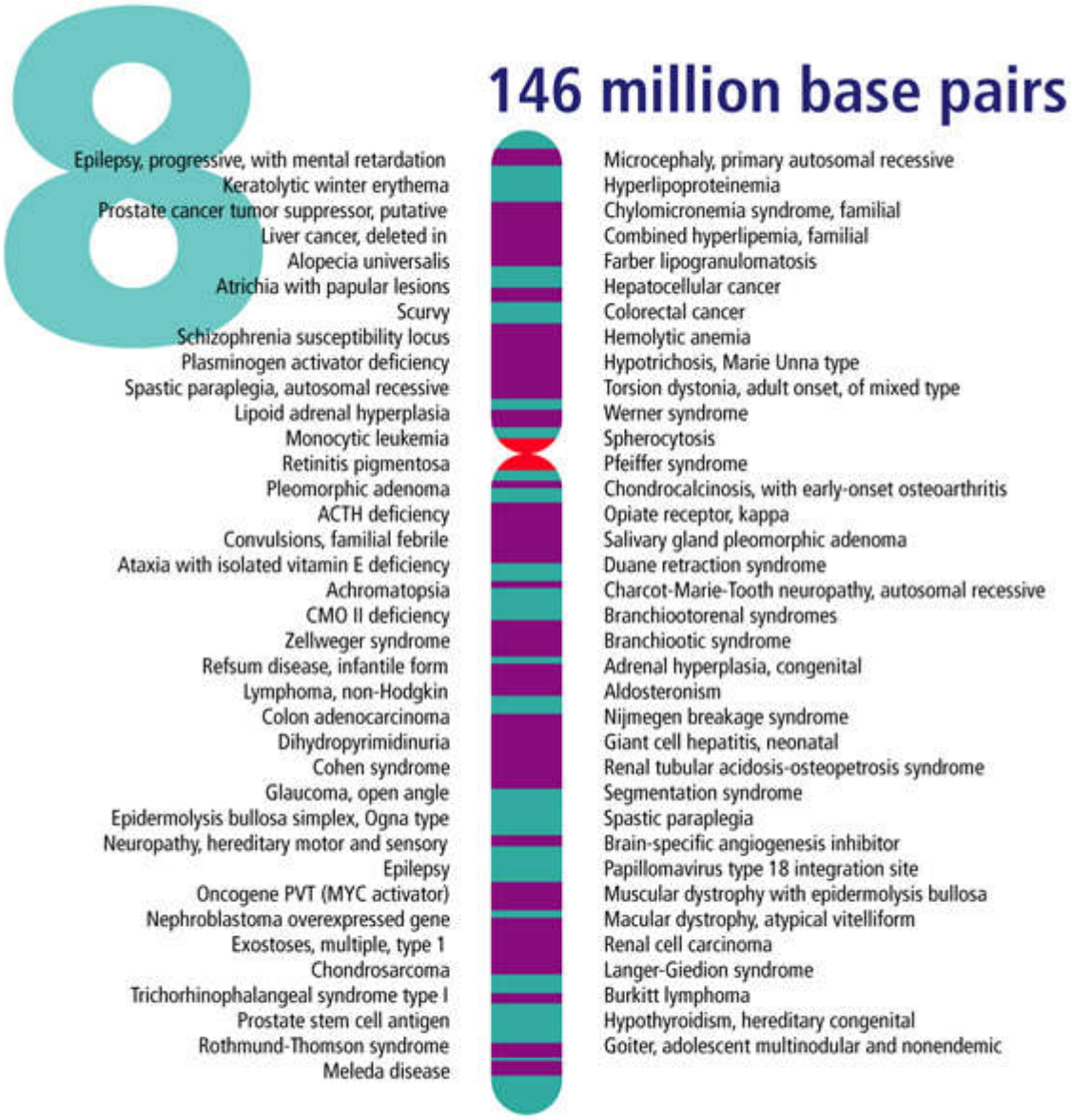
Multiple myeloma oncogene
Orofacial cleft
Leukemia, acute nonlymphocytic
Fanconi anemia, complementation group E
Ankylosing spondylitis
Stickler syndrome, type II
OSMED syndrome
Weissenbacher-Zweymuller syndrome
Deafness, nonsyndromic sensorineural
Dyslexia
Hemochromatosis
Porphyria variegata
Pemphigoid, susceptibility to
Immune suppression to streptococcal antigen
Sialidosis, types I and II
Panbronchiolitis, diffuse
Psoriasis susceptibility
Ehlers-Danlos-like syndrome
Cone dystrophy
Polycystic kidney and hepatic disease, autosomal recessive
Retinal degeneration, slow (peripherin)
Retinitis pigmentosa, peripherin-related and punctata albescens
Macular dystrophy
Butterfly dystrophy, retinal
Cleidocranial dysplasia
Dental anomalies, isolated
Nystagmus, autosomal dominant
Bullous pemphigoid antigen 1
Pelviureteric junction obstruction
Stargardt disease, autosomal dominant
Epilepsy, juvenile myoclonic
Brain-specific angiogenesis inhibitor
Diazepam-binding inhibitor
Schizophrenia susceptibility locus
Salla disease
Sialic acid storage disorder, infantile
Chorioretinal atrophy, progressive bifocal
Melanoma, absent in
Metaphyseal chondrodysplasia, Schmid type
Spondylometaphyseal dysplasia, Japanese type
Hepatic fibrosis susceptibility
Oculodentodigital dysplasia (Syndactyly type III)
Hereditary persistence of fetal hemoglobin, heterocellular
Argininemia
Leukemia
Immune interferon, receptor for
Mycobacterial infection, atypical, familial disseminated
BCG infection, generalized familial
Tuberculosis, susceptibility to
Diabetes mellitus, transient neonatal
Pleomorphic adenoma (ZAC tumor supressor)
Parkinson disease, juvenile, type 2
Plasminogen Tochigi disease
Thrombophilia, dysplasminogenemic
Plasminogen deficiency, types I and II

7

158 million base pairs

Ewing sarcoma
Turcot syndrome with glioblastoma
Colorectal cancer, hereditary nonpolyposis, type 4
Osteopenia/osteoporosis
Macular dystrophy, dominant cystoid
Retinitis pigmentosa
Growth hormone deficient dwarfism
Hand-foot-uterus syndrome
Hyperinsulinism, familial
Charcot-Marie-Tooth neuropathy, neuronal type D
Alpha-ketoglutarate dehydrogenase deficiency
Myopathy
T-cell tumor invasion and metastasis
Argininosuccinicaciduria
Hyperreflexia
Clostridium perfringens enterotoxin receptor
Supravalvar aortic stenosis
Williams-Beuren syndrome
Cutis laxa
Cytoplasmic linker
Williams-Beuren syndrome chromosome region 4
Chronic granulomatous disease
Malignant hyperthermia susceptibility
P-glycoprotein/multiple drug resistance
Colchicine resistance
Cholestasis
Split hand/foot malformation (ectrodactyly) type 1
Paraoxonase
Coronary artery disease, susceptibility to
Plasminogen activator inhibitor, type I
Thrombophilia
Hemorrhagic diathesis
Hemochromotosis
Osteogenesis imperfecta
Ehlers-Danlos syndrome, type VIIA2
Osteoporosis, idiopathic
Marfan syndrome, atypical
Deafness, autosomal recessive
Pendred syndrome
Deafness, autosomal recessive
Enlarged vestibular aqueduct
Lipoamide dehydrogenase deficiency
Hemolytic anemia
Suppression of tumorigenicity (breast)
Obesity
Taste receptors
Renal tubular acidosis, distal, autosomal recessive
Deafness, autosomal recessive
Trypsinogen deficiency
Pancreatitis, hereditary
Glaucoma-related pigment dispersion syndrome

Lunatic fringe
Craniosynostosis, type 1
Saethre-Chotzen syndrome
Blepharophimosis, epicanthus inversus, and ptosis
Deafness, autosomal dominant
Myeloid leukemia
Cerebral cavernous malformations
Wilms tumor suppressor locus
Amphiphysin (Stiff-Man syndrome)
Greig cephalopolysyndactyly syndrome
Pallister-Hall syndrome
Polydactyly
Glioblastoma amplified sequence
Spinal muscular atrophy, distal
Autism, susceptibility to
Limb-girdle muscular dystrophy, autosomal dominant
Platelet glycoprotein IV deficiency
Cerebral cavernous malformations
Colon cancer
Zellweger syndrome
Adrenoleukodystrophy, neonatal
Refsum disease, infantile
Mucopolysaccharidosis
Osteoporosis, postmenopausal, susceptibility
Citrullinemia, adult-onset type II
Ulcerative colitis, susceptibility to
Adenoma, down-regulated in
Chloride diarrhea, congenital, Finnish type
Cardiomyopathy, familial hypertrophic
Renal cell carcinoma, papillary, familial and sporadic
Hepatocellular carcinoma, childhood type
Speech-language disorder
Basal cell carcinoma, sporadic
Retinitis pigmentosa, autosomal dominant
Cystic fibrosis
Congenital bilateral absence of vas deferens
Sweat chloride elevation without CF
Colorblindness, blue cone pigment
Myotonia
Glaucoma, open angle
Human ether-a-go-go-related gene
Long QT syndrome
Preeclampsia, susceptibility to
Coronary spasm, susceptibility to
Holoprosencephaly
Serotonin receptor
Growth rate controlling factor
Currarino syndrome
Sacral agenesis
Triphalangeal thumb-polysyndactyly syndrome
X-ray repair


8
146 million base pairs
Epilepsy, progressive, with mental retardation
Keratolytic winter erythema
Prostate cancer tumor suppressor, putative
Liver cancer, deleted in
Alopecia universalis
Atrichia with papular lesions
Scurvy
Schizophrenia susceptibility locus
Plasminogen activator deficiency
Spastic paraplegia, autosomal recessive
Lipoid adrenal hyperplasia
Monocytic leukemia
Retinitis pigmentosa
Pleomorphic adenoma
ACTH deficiency
Convulsions, familial febrile
Ataxia with isolated vitamin E deficiency
Achromatopsia
CMO II deficiency
Zellweger syndrome
Refsum disease, infantile form
Lymphoma, non-Hodgkin
Colon adenocarcinoma
Dihydropyrimidinuria
Cohen syndrome
Glaucoma, open angle
Epidermolysis bullosa simplex, Ogna type
Neuropathy, hereditary motor and sensory
Epilepsy
Oncogene PVT (MYC activator)
Nephroblastoma overexpressed gene
Exostoses, multiple, type 1
Chondrosarcoma
Trichorhinophalangeal syndrome type I
Prostate stem cell antigen
Rothmund-Thomson syndrome
Meleda disease
Microcephaly, primary autosomal recessive
Hyperlipoproteinemia
Chylomicronemia syndrome, familial
Combined hyperlipemia, familial
Farber lipogranulomatosis
Hepatocellular cancer
Colorectal cancer
Hemolytic anemia
Hypotrichosis, Marie Unna type
Torsion dystonia, adult onset, of mixed type
Werner syndrome
Spherocytosis
Pfeiffer syndrome
Chondrocalcinosis, with early-onset osteoarthritis
Opiate receptor, kappa
Salivary gland pleomorphic adenoma
Duane retraction syndrome
Charcot-Marie-Tooth neuropathy, autosomal recessive
Branchiootorenal syndromes
Branchiootic syndrome
Adrenal hyperplasia, congenital
Aldosteronism
Nijmegen breakage syndrome
Giant cell hepatitis, neonatal
Renal tubular acidosis-osteopetrosis syndrome
Segmentation syndrome
Spastic paraplegia
Brain-specific angiogenesis inhibitor
Papillomavirus type 18 integration site
Muscular dystrophy with epidermolysis bullosa
Macular dystrophy, atypical vitelliform
Renal cell carcinoma
Langer-Giedion syndrome
Burkitt lymphoma
Hypothyroidism, hereditary congenital
Goiter, adolescent multinodular and nonendemic

9

136 million base pairs

Sex-reversal, autosomal
Hyperglycinemia, nonketotic
Suppression of tumorigenicity, pancreas
Diaphyseal medullary stenosis
Melanoma
Trichoepithelioma, multiple familial
Immotile cilia syndrome
Cartilage-hair hypoplasia
X-ray repair
Fanconi anemia, complementation group G
Sialuria
Hyperoxaluria, primary, type II
Cardiomyopathy
Deafness, autosomal recessive
Choreoacanthocytosis
Prostate-specific gene
Bamforth-Lazarus syndrome
Tyrosine kinase-like orphan receptor
Brachydactyly, type B1
Nephronophthisis (infantile)
Neuropathy, sensory and autonomic, type 1
Fructose intolerance
Basal cell carcinoma, sporadic
Muscular dystrophy, Fukuyama congenital
Basal cell nevus syndrome
Dysautonomia (Riley-Day syndrome)
Esophageal cancer
Endotoxin hyporesponsiveness
Amyotrophic lateral sclerosis, juvenile dominant
Berardinelli-Seip congenital lipodystrophy
Dystonia, torsion, autosomal dominant
Lethal congenital contracture syndrome
Leukemia, acute undifferentiated
Tuberous sclerosis
Hemolytic anemia
Telangiectasia, hereditary hemorrhagic
Ehlers-Danlos syndrome, types I and II
Joubert syndrome
Leukemia, T-cell acute lymphoblastic

Ovarian cancer
Albinism, brown and rufous
Interferon, alpha, deficiency
Leukemia
Cyclin-dependent kinase inhibitor
Venous malformations, multiple cutaneous and mucosal
Arthrogryposis multiplex congenita, distal, type 1
Galactosemia
Acromesomelic dysplasia, Maroteaux type
Myopathy, inclusion body, autosomal recessive
Hypomagnesemia with secondary hypocalcemia
Friedreich ataxia
Geniospasm
Bleeding diathesis
Hemophagocytic lymphohistiocytosis, familial
Chondrosarcoma, extraskeletal myxoid
Pseudohermaphroditism, male, with gynecomastia
Tangier disease
HDL deficiency, familial
Fanconi anemia, type C
Xeroderma pigmentosum
Epithelioma, self-healing, squamous
Leukemia, T-cell acute lymphoblastic
Muscular dystrophy, limb-girdle, type 2H
Bladder cancer
Sex reversal, XY, with adrenal failure
Leukemia transcription factor, pre-B-cell
Porphyria, acute hepatic
Lead poisoning, susceptibility to
Citrullinemia
Dopamine-beta-hydroxylase deficiency
Amyloidosis, Finnish type
Microcephaly, primary autosomal recessive
Leigh syndrome
Leukemia
Nail-patella syndrome
Prostaglandin D2 synthase (brain)
Pituitary hormone deficiency

10

135 million base pairs

Refsum disease, adult
Hypoparathyroidism, deafness, renal dysplasia
DiGeorge syndrome/velocardiofacial syndrome
Leukemia
Thrombocytopenia
Osaka thyroid oncogene
Ewing Sarcoma
Obesity, susceptibility to
Multiple endocrine neoplasia
Medullary thyroid carcinoma
Hirschsprung disease
Thyroid papillary carcinoma
Deafness, autosomal recessive
Serotonin receptor
Moebius syndrome
Hemolytic anemia
Hyperphenylalaninemia
Metachromatic leukodystrophy
Gaucher disease, variant form
SEMD, Pakistani type
Hermansky-Pudlak syndrome
Breast cancer
Multiple advanced cancers
Cowden disease
Lhermitte-Duclos syndrome
Bannayan-Zonana syndrome
Endometrial carcinoma
Polyposis, juvenile intestinal
Prostate cancer
Progressive external ophthalmoplegia
Corneal dystrophy, Thiel-Behnke type
Leukemia, T-cell acute lymphocytic
Spinocerebellar ataxia, infantile-onset
Split hand/foot malformation, type 3
Polycystic kidney disease
Meningioma-expressed antigen
Adrenal hyperplasia, congenital
Diabetes mellitus, insulin-dependent
Anterior segment mesenchymal dysgenesis
Cataract, congenital
Malignant brain tumors
Glioblastoma multiforme
Medulloblastoma
Crouzon syndrome
Jackson-Weiss syndrome
Beare-Stevenson cutis gyrata syndrome

Suppression of tumorigenicity, prostate
Prostate adenocarcinoma
Interleukin receptor, alpha chain, deficiency of
Arrhythmogenic right ventricular dysplasia
Myasthenic antigen B
Lambert-Eaton syndrome
Megaloblastic anemia
Diabetes mellitus, insulin-dependent
Severe combined immunodeficiency disease, Athabascan
Cockayne syndrome, type B
Cerebrooculofacioskeletal syndrome
Opsonic defect
Chronic infections
Retinal nonattachment, nonsyndromic congenital
Cardiomyopathy, dilated, autosomal dominant
Neuropathy, congenital hypomyelinating
Graves disease autoantigen
Hypermethioninemia, persistent, autosomal dominant
Hemophagocytic lymphohistiocytosis, familial
Retinitis pigmentosa, autosomal recessive and dominant
Urofacial syndrome (Ochoa syndrome)
Hypoglobulinemia and absent B cells
Hyperinsulinism-hyperammonemia syndrome
Spastic paraplegia
Dubin-Johnson syndrome
Warfarin sensitivity
Wolman disease
Cholesteryl ester storage disease
Tumor necrosis factor receptor superfamily, member 6
Autoimmune lymphoproliferative syndrome
Epidermolysis bullosa, generalized atrophic benign
Optic nerve coloboma with renal disease
Prostate cancer
Neurofibrosarcoma
Porphyria, congenital erythropoietic
Endometrial carcinoma
Gyrate atrophy of choroid and retina
Pancreatic lipase deficiency
Glaucoma
Pfeiffer syndrome
Apert syndrome
Saethre-Chotzen syndrome
Schizencephaly
Polykaryocytosis inducer (promoter)
Usher syndrome, autosomal recessive, severe

11

134 million base pairs

Beckwith-Wiedemann syndrome
Cyclin-dependent kinase inhibitor
Dopamine receptor
Autonomic nervous system dysfunction
Long QT syndrome
Jervell and Lange-Nielsen syndrome
Thalassemia
Diabetes mellitus, rare form
Hyperproinsulinemia, familial
Breast cancer
Rhabdomyosarcoma
Lung cancer
Segawa syndrome, recessive
Hypoparathyroidism, dominant and recessive
Tumor susceptibility gene
Breast cancer
Usher syndrome
Atrophia areata
Fanconi anemia, complementation group F
Leukemia, myeloid and lymphycytic
Acatalasemia
Aniridia
Peters anomaly
Cataract, congenital
Foveal hypoplasia, isolated
Keratitis
Severe combined immunodeficiency, B cell-negative
Reticulosis, familial histiocytic
Omenn syndrome
Wilms tumor, type 1
Denys-Drash syndrome
Frasier syndrome
Foramina parietalia permagna (Catlin marks)
Exostoses, multiple
Suppression of tumorigenicity, prostate
Prostate cancer
Spinocerebellar ataxia
Hyperlipidemia, combined
Osteoarthritis susceptibility, female-specific
Xeroderma pigmentosum, group E, subtype 2
High bone mass
Osteoporosis-pseudoglioma syndrome
Parathyroid adenomatosis
Centrocytic lymphoma
Multiple myeloma
Mammary tumor and squamous cell carcinoma
Anemia, pernicious, congenital
Multiple endocrine neoplasia
Hyperparathyroidism
Prolactinoma, carcinoid syndrome
Asthma, atopic, susceptibility to
Leukemia, acute promyelocytic
Retinitis pigmentosa, digenic
Cervical carcinoma
Macular dystrophy, vitelliform type (Best disease)
Spinal muscular atrophy with respiratory distress
Paraganglioma or familial glomus tumors
Folate receptor, adult
T-cell immune regulator
Osteopetrosis, recessive
Leukemia, acute myeloid and T-cell lymphoblastic
Ataxia-telangiectasia-like disorder
Apoptosis inhibitor
Deafness, autosomal dominant and recessive
Phenylketonuria
Hypertriglyceridemia
Immunodeficiency
Erythrocytosis, autosomal recessive benign
Glycogen storage disease
Jacobsen syndrome
Paragangliomas, familial nonchromaffin
Herpes virus entry mediator
Epstein-Barr virus modification site
Serotonin receptor
Porphyria, acute intermittent

Freeman-Sheldon syndrome variant
Jansky-Bielschowsky disease
Diabetes mellitus, insulin-dependent
Sickle cell anemia
Thalassemias, beta
Erythremias, beta
Heinz body anemias, beta
HPFH, deletion type
Bladder cancer
Wilms tumor, type 2
Adrenocortical carcinoma, hereditary
Sjogren syndrome antigen
Niemann-Pick disease, types A and B
Osteoporosis
Persistent hyperinsulinemic hypoglycemia of infancy
Deafness, autosomal recessive
Charcot-Marie-Tooth disease, type 4B
Leukemia, T-cell acute lymphoblastic
Hepatitis B virus integration site
Hepatocellular carcinoma
Lacticacidemia
T-cell leukemia/lymphoma
Diabetes mellitus, noninsulin-dependent
Xeroderma pigmentosum, group E
Cardiomyopathy, familial hypertrophic
Prostate cancer overexpressed gene
Coagulation factor II (thrombin)
Hypoprothrombinemia
Dysprothrombinemia
Complement component inhibitor
Angioedema, hereditary
Smith-Lemli-Opitz syndrome, types I and II
IgE responsiveness, atopic
Bardet-Biedl syndrome
Kaposi sarcoma
Diabetes mellitus, insulin-dependent
Meckel syndrome, type 2
Leigh syndrome
Alexander disease
McArdle disease
Somatotrophinoma
UV radiation resistance-associated gene
Vitreoretinopathy
Leukemia/lymphoma, B-cell
Pyruvate carboxylase deficiency
Usher syndrome, type 1B
Papillon-Lefevre syndrome
Albinism, oculocutaneous, type IA
Waardenburg syndrome
Glomerulosclerosis
Lung cancer
Ataxia-telangiectasia
T-cell prolymphocytic leukemia, sporadic
Lymphoma, B-cell non-Hodgkin
Breast cancer
Myopathy, desmin-related, cardioskeletal
ApoA-I and apoC-III deficiency
Hypertriglyceridemia
Hypoalphalipoproteinemia
Corneal clouding, autosomal recessive
Amyloidosis
Dopamine receptor
Dystonia, myoclonic
Ectodermal dysplasia, type 4 (Margarita type)
Hypomagnesemia, renal
Leukemia, myeloid/lymphoid or mixed-lineage
Lung cancer, non small-cell
Hydrolethalus syndrome
Porphyria, acute, Chester type
Megaloblastic anemia syndrome
Friend leukemia virus integration
Ewing sarcoma
Histiocytosis with joint contractures and deafness
Opioid-binding protein/cell adhesion molecule
Bartter syndrome, type 2

12

132 million base pairs

Lupus erythematosus
Hypophosphatemic rickets, autosomal dominant
Coagulation factor VIII (von Willebrand factor)
Tumor necrosis factor receptor superfamily
Periodic fever, familial
Keutel syndrome
Periodic fever, familial (Hibernian fever)
Episodic ataxia/myokymia syndrome
Pseudohypoaldosteronism, type I
Hemolytic anemia
Diabetes-associated peptide (amylin)
Lactate dehydrogenase-B deficiency
Colorectal cancer
Fibrosis of extraocular muscles, autosomal dominant
Adrenoleukodystrophy
Palmoplantar keratoderma, Bothnia type
Melanoma
Rickets, vitamin D-resistant
Anti-Mullerian hormone receptor, type II
Persistent Mullerian duct syndrome, type II
Activating transcription factor 1
Soft tissue clear cell sarcoma
Myopathy, congenital
Meesmann corneal dystrophy
Epidermolysis bullosa simplex
Cataract, polymorphic and lamellar
Sarcoma amplified sequence
Enuresis, nocturnal
Achondrogenesis-hypochondrogenesis, type II
Osteoarthrosis, precocious
Wagner syndrome, type II
SMED, Strudwick type
Scapuloperoneal syndrome
Sanfilippo syndrome, type D
Lipoma
Salivary adenoma
Uterine leiomyoma
Myopia, high grade, autosomal dominant
Darier disease
Spinocerebellar ataxia
Mevalonicaciduria
Hyperimmunoglobulinemia D and periodic fever
Spinal muscular atrophy
Phenylketonuria
Ulnar-mammary syndrome
Diabetes mellitus
Maturity-Onset Diabetes of the Young
Oral cancer

Dentatorubro-pallidoluysian atrophy
Emphysema
Alzheimer disease, susceptibility to
Inflammatory bowel disease
Leukemia, acute lymphoblastic
Hypertension, essential, susceptibility to
Leukemia factor, myeloid
Spastic paraplegia, autosomal dominant
Taste receptors
Glycogen storage disease, type 0
Hypertension with brachydactyly
Alzheimer disease, familial
Retinoblastoma-binding protein
Ichthyosis bullosa of Siemens
Telangiectasia, hereditary hemorrhagic
Leukemia: myeloid, lymphoid, or mixed-lineage
Allgrove syndrome
Diabetes insipidus, nephrogenic, dominant and recessive
Human papillomavirus type 18 integration site
Epidermolytic hyperkeratosis
Keratoderma, palmoplantar, nonepidermolytic
Cyclic ichthyosis with epidermolytic hyperkeratosis
White sponge nevus
Pachyonychia congenita
Fundus albipunctatus
Glioma
Myxoid liposarcoma
Stickler syndrome, type I
SED congenita
Kniest dysplasia
Glycogen storage disease
Rickets, pseudovitamin D deficiency
Interferon, immune, deficiency
Cornea plana congenita, recessive
Growth retardation with deafness and mental retardation
Spinal muscular atrophy, congenital nonprogressive
Cardiomyopathy, hypertrophic
Brachydactyly, type C
Noonan syndrome
Cardiofaciocutaneous syndrome
Tyrosinemia, type III
Lymphoma, B-cell non-Hodgkin, high-grade
Holt-Oram syndrome
Alcohol intolerance, acute
Tumor rejection antigen
Human immunodeficiency virus-1 expression
Amyloidosis, renal

13

113 million base pairs

Cholesterol-lowering factor
Deafness, autosomal dominant and recessive
Vohwinkel syndrome
Ectodermal dysplasia
Muscular dystrophy, limb-girdle, type 2C
Breast cancer, early onset
Pancreatic cancer
Disrupted in B-cell neoplasia
Leukemia, chronic lymphocytic, B-cell
MHC class II deficiency, group B
Hyperornithinemia, hyperammonemia, homocitrullinemia
Serotonin receptor
Retinoblastoma
Osteosarcoma
Bladder cancer
Pinealoma with bilateral retinoblastoma
Wilson disease
Postaxial polydactyly, type A2
Hirschsprung disease
Propionicacidemia, types I or pccA
Holoprosencephaly
Bile acid malabsorption, primary

Cataract, zonular pulverulent
Stem-cell leukemia/lymphoma syndrome
Spastic ataxia, Charlevoix-Saguenay type
Pancreatic agenesis
Maturity Onset Diabetes of the Young, type IV
Enuresis, nocturnal
Dementia, familial British
Rieger syndrome, type 2
X-ray sensitivity
Rhabdomyosarcoma, alveolar
Lung cancer, non small-cell
Spinocerebellar ataxia
Ceroid-lipofuscinosis, neuronal
Microcoria, congenital
Schizophrenia susceptibility
Xeroderma pigmentosum, group G
Coagulation Factor VII deficiency
Oguchi disease
Stargardt disease, autosomal dominant
Coagulation Factor X deficiency
Breast cancer, ductal

14

105 million base pairs

Chorea, hereditary benign
Meningioma-expressed antigen
Myopathy, distal
Defender against cell death
Temperature-sensitive apoptosis
Lysinuric protein intolerance
Ichthyosis, lamellar, autosomal recessive
Ichthyosiform erythroderma, congenital
Spastic paraplegia
Deafness, autosomal recessive
Deafness, autosomal dominant
Meniere disease
Arrhythmogenic right ventricular dysplasia
Immunodeficiency
Glycogen storage disease
Phenylketonuria, atypical
Dystonia, DOPA-responsive
Leber congenital amaurosis, type III
Tyrosinemia, type Ib
Alzheimer disease
Machado-Joseph disease
Ovarian cancer
Microphthalmia, autosomal recessive
Cerebrovascular disease, occlusive
Leukemia/lymphoma, T-cell
Agammaglobulinemia
Achromatopsia

Basal ganglia calcification (Fahr disease)
Multinodular goiter
Retinitis pigmentosa, autosomal dominant
Leukemia/lymphoma, T-cell
Oculopharyngeal muscular dystrophy, autosomal recessive
APEX nuclease (multifunctional DNA repair enzyme)
Cardiomyopathy, familial hypertrophic
Oligodontia
Goiter, familial
Carbohydrate-deficient glycoprotein syndrome, type II
Elliptocytosis
Spherocytosis
Anemia, neonatal hemolytic, fatal and near-fatal
Arrhythmogenic right ventricular dysplasia
Marfan syndrome, atypical
DNA mismatch repair gene MLH3
Diabetes mellitus, insulin-dependent
Krabbe disease
Hypothyroidism, congenital
Thyroid adenoma, hyperfunctioning
Graves disease
Hyperthroidism, congenital
Usher syndrome, autosomal recessive
Emphysema-cirrhosis
Hemorrhagic diathesis
X-ray repair

15

100 million base pairs

Hypertension, essential, susceptibility to
CLL/lymphoma, B-cell
Lymphoma, diffuse large cell
Necdin
Prader-Willi syndrome
Angelman syndrome
Hair color, brown
Spastic paraplegia
Limb deformity
Schizophrenia, neurophysiologic defect in
Isovalericacidemia
Spherocytosis, hereditary, Japanese type
Bartter syndrome
Amytrophic lateral sclerosis, juvenile recessive
Dyserythropoietic anemia, congenital, type III
Griscelli syndrome
Deafness, autosomal recessive
Hepatic lipase deficiency
Marfan syndrome
Shprintzen-Goldberg syndrome
Ectopia lentis, familial
Leukemia, acute promyelocytic, PML/RARA type
Cardiomyopathy, familial hypertrophic
Enhanced S-cone syndrome
Glutaricaciduria, type IIA
Epilepsy, nocturnal frontal lobe, type 2
PAPA syndrome
Diabetes mellitus, insulin-dependent

Prader-Willi/Angelman syndrome (paternally imprinted)
Eye color, brown
Human coronavirus sensitivity
Albinism, oculocutaneous, type II and ocular
Andermann syndrome
Cardiomyopathy, dilated and familial hypertrophic
Epilepsy, juvenile myoclonic
Spinocerebellar ataxia
Microcephaly, primary autosomal recessive
Dyserythropoietic anemia, congenital, type I
Muscular dystrophy, limb-girdle, type 2A
Dyslexia
Amyloidosis, hemodialysis-related
Ceroid-lipofuscinosis, neuronal, late infantile
Gynecomastia, familial
Virilization, maternal and fetal
Colorectal cancer
Carbohydrate-deficient glycoprotein syndrome, type Ib
Bardet-Biedl syndrome
Tay-Sachs disease
GM2-gangliosidosis
Tyrosinemia, type I
Mental retardation, severe
Hypercholesterolemia, familial, autosomal recessive
Retinitis pigmentosa, autosomal recessive
Otosclerosis
Bloom syndrome

16

90 million base pairs

Methemoglobinemias, alpha
Erythremias, alpha
Heinz body anemias, alpha
Alpha-thalassemia/mental retardation
Axis inhibitor
Hepatocellular carcinoma
Rubenstein-Taybi syndrome
Tuberous sclerosis
Polycystic kidney disease, adult type I
Leukemia, acute myelomonocytic
Pseudoxanthoma elasticum
Epilepsy, myoclonic, infantile
MHC class II deficiency
Retinitis pigmentosa
Atopy, susceptibility to
Glycogenosis, hepatic, autosomal
Medullary cystic kidney disease, autosomal dominant
Convulsions, infantile and paroxysmal choreoathetosis
Arthrocutaneouveal granulomatosis (Blau syndrome)
Paroxysmal kinesigenic choreoathetosis
Wilms tumor
Hypodontia, autosomal recessive
Cocaine- and antidepressant-sensitive
Orthostatic intolerance
Leukemia, acute myelogenous
Macular dystrophy, corneal
Cataract, Marner type
Norum disease
Fish-eye disease
Tyrosinemia, type II
Breast cancer antiestrogen resistance
Fibrosis of extraocular muscles, congenital
Fanconi anemia, complementation group A
Lymphedema with distichiasis
Spastic paraplegia
Chronic granulomatous disease, autosomal
Giant axonal neuropathy
Urolithiasis, 2,8-dihydroxyadenine
Mucopolysaccharidosis
UV-induced skin damage, vulnerability to

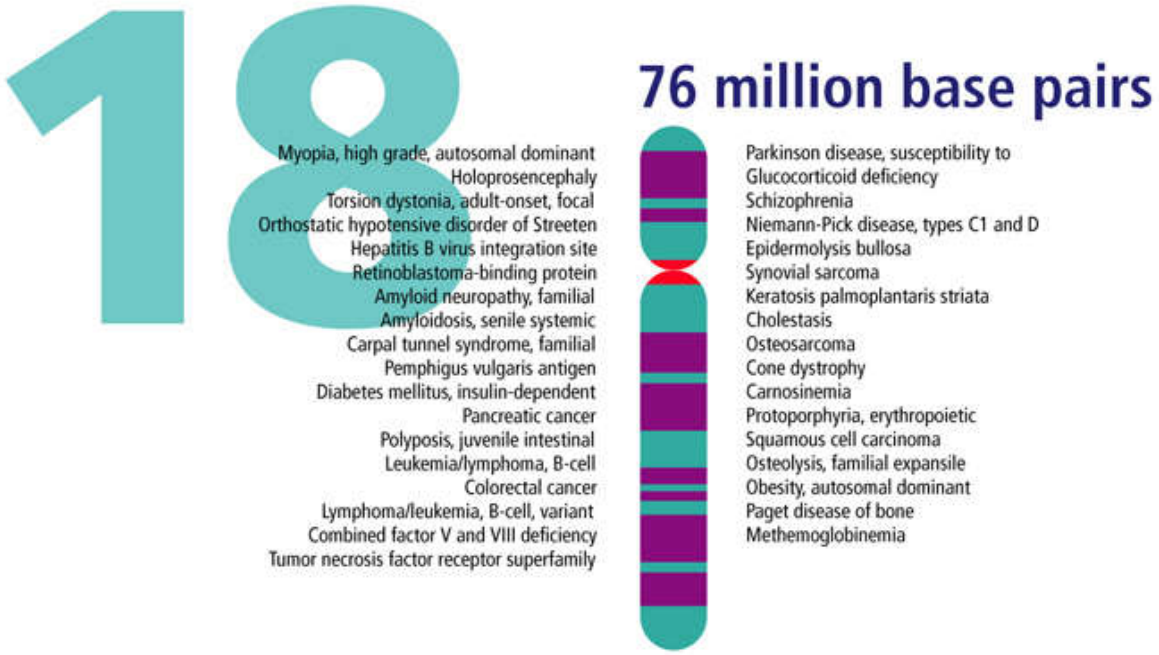
Thalassemia, alpha
Erythrocytosis
Heinz body anemia
Hemoglobin H disease
Hypochromic microcytic anemia
GABA-transaminase deficiency
Cataract, congenital, with microphthalmia
Polycystic kidney disease, infantile severe
Ubiquitin-specific protease, herpes virus-associated
Xeroderma pigmentosum, group F
Microhydranencephaly
Tamm-Horsfall glycoprotein
Cerebellar degeneration-related antigen
Familial Mediterranean fever
Liddle syndrome
Pseudohypoaldosteronism, type I
Batten disease
Mitral valve prolapse, familial
Brody myopathy
Retinoblastoma-binding protein
Inflammatory bowel disease (Crohn disease)
Myxoid liposarcoma, fusion gene in
Cylindromatosis, familial
Spiegler-Brooke syndrome
Townes-Brocks syndrome
Retinoblastoma
Gitelman syndrome
Bardet-Biedl syndrome
Leukemia, acute myeloid, M4Eo subtype
Ras-related gene associated with diabetes
Endometrial carcinoma
Ovarian carcinoma
Breast cancer, lobular
Gastric cancer, familial
Benzene toxicity, susceptibility to
Leukemia, postchemotherapy, susceptibility to
Spinocerebellar ataxia
Stomatocytosis, dehydrated hereditary
Pseudohyperkalemia, familial

17

81 million base pairs

Canavan disease
Ovarian cancer
Miller-Dieker syndrome
Retinitis pigmentosa
Tumor protein p53
Colorectal cancer
Li-Fraumeni syndrome
Cystinosis, nephropathic
Diabetes mellitus, noninsulin-dependent
Cone dystrophy
Myasthenic syndrome
Deafness, autosomal recessive
Smith-Magenis syndrome
VLCAD deficiency
Maturity Onset Diabetes of the Young, type V
Hypertension, essential, susceptibility to
T-cell immunodeficiency, alopecia, and nail dystrophy
Chondrosarcoma, extraskeletal myxoid
Neurotransmitter transporter, serotonin (anxiety-related)
Neurofibromatosis, type 1
Watson syndrome
Leukemia, juvenile myelomonocytic
HIV-1 disease, delayed progression of
Meesmann corneal dystrophy
Muscular dystrophy, limb-girdle
Epidermolysis bullosa simplex, recessive
Pachyonychia congenita, Jackson-Lawler type
Steatocystoma multiplex
Wilms tumor, type 4
Glycogen storage disease (von Gierke disease)
Parkinsonism-dementia
Epidermolytic hyperkeratosis
Patella aplasia or hypoplasia
Osteogenesis imperfecta
Ehlers-Danlos syndrome, types I and VIIA
Osteoporosis, idiopathic
Ovarian carcinoma antigen
Neuroblastoma
Glanzmann thrombasthenia, type A
Thrombocytopenia, neonatal alloimmune
CLL/lymphoma, B-cell
Retinitis pigmentosa
Pituitary tumor, invasive
Myocardial infarction, susceptibility to
Alzheimer disease, susceptibility to
Myotonia congenita, atypical
Cramps, familial
Fetal Alzheimer antigen
Lung cancer, small-cell
Campomelic dysplasia with autosomal sex reversal
Apoptosis inhibitor
Diabetes mellitus, type II
Radical fringe

Bernard-Soulier syndrome
Breast cancer-related regulator of TP53
Hypermethylated in cancer
Lissencephaly
Subcortical laminar heterotopia
Leber congenital amaurosis, type I
Medulloblastoma
Cataract, anterior polar
Myasthenia gravis, familial infantile
Bruck syndrome
Sjogren-Larsson syndrome
Charcot-Marie-Tooth neuropathy
Dejerine-Sottas disease
Van der Woude syndrome modifier
Choroidal dystrophy, central areolar
Huntingtin-associated protein
Psoriasis susceptibility
Epidermolysis bullosa
Alzheimer disease, susceptibility to
Van Buchem disease
Malignant hyperthermia susceptibility
Leukemia, acute promyelocytic
Epidermolytic palmoplantar keratoderma
Pachyonychia congenita, Jadassohn-Lewandowsky type
Keratoderma, nonepidermolytic palmoplantar
Sclerosteosis
Muscular dystrophy, Duchenne-like, type 2
Adhalinopathy, primary
Breast cancer, early onset
Ovarian cancer
Leukemia, myeloid/lymphoid or mixed-lineage
Breast cancer, sporadic
Gliosis, familial progressive subcortical
Pseudohypoaldosteronism type II
Spherocytosis, hereditary
Hemolytic anemia
Renal tubular acidosis, distal
T-cell leukemia virus (I and II) receptor
Dementia, frontotemporal, with Parkinsonism
Trichodontoosseous syndrome
Glanzmann thrombasthenia, type B
Symphalangism, proximal
Synostoses syndrome, multiple
Mulibrey nanism
Growth hormone deficiency
Myeloperoxidase deficiency
Cataracts
Tylosis with esophageal cancer
Adrenoleukodystrophy, pseudoneonatal
Deafness, autosomal dominant
Leukemia, acute myeloid, therapy-related
Myasthenic syndrome, slow-channel congenital
Sanfilippo syndrome, types A and B


18
76 million base pairs
Myopia, high grade, autosomal dominant
Holoprosencephaly
Torsion dystonia, adult-onset, focal
Orthostatic hypotensive disorder of Streeten
Hepatitis B virus integration site
Retinoblastoma-binding protein
Amyloid neuropathy, familial
Amyloidosis, senile systemic
Carpal tunnel syndrome, familial
Pemphigus vulgaris antigen
Diabetes mellitus, insulin-dependent
Pancreatic cancer
Polyposis, juvenile intestinal
Leukemia/lymphoma, B-cell
Colorectal cancer
Lymphoma/leukemia, B-cell, variant
Combined factor V and VIII deficiency
Tumor necrosis factor receptor superfamily
Parkinson disease, susceptibility to
Glucocorticoid deficiency
Schizophrenia
Niemann-Pick disease, types C1 and D
Epidermolysis bullosa
Synovial sarcoma
Keratosis palmoplantaris striata
Cholestasis
Osteosarcoma
Cone dystrophy
Carnosinemia
Protoporphyria, erythropoietic
Squamous cell carcinoma
Osteolysis, familial expansile
Obesity, autosomal dominant
Paget disease of bone
Methemoglobinemia

19

63 million base pairs

Coxsackie virus sensitivity
Cyclic hematopoiesis
Fucosyltransferase-6 deficiency
Hypocalciuric hypercalcemia, type II
Leukemia, myeloid/lymphoid or mixed-lineage
Wegener granulomatosis autoantigen
Bleeding disorder
Persistent Mullerian duct syndrome, type I
Mucolipidosis
Glutaricaciduria, type I
Leprechaunism
Rabson-Mendenhall syndrome
Diabetes mellitus, insulin-resistant
Ichthyosis
Leukemia, T-cell acute lymphoblastoid
Liposarcoma
Mycobacterial and salmonella infections, susceptibility to
Eye color, green/blue
Hemiplegic migraine, familial
Episodic ataxia, type 2
Ataxia, spinocerebellar and cerebellar
Leukemia, acute myeloid
Mannosidosis, alpha, types I and II
Alzheimer disease, late onset
Glomerulosclerosis, focal segmental
Deafness, autosomal dominant
Hypercalcemia, familial benign, Oklahoma type, type III
Orofacial cleft
Charcot-Leyden crystal protein
Hemolytic anemia
Hydrops fetalis
Malignant hyperthermia susceptibility
Central core disease
Osteodysplasia, polycystic lipomembranous
Maple syrup urine disease, type Ia
Camurati-Engelmann disease
Myotonic dystrophy
Heart block, progressive familial, type I
Optic atrophy
3-methylglutaconicaciduria, type III
Cystic fibrosis modifier
Meconium ileus in cystic fibrosis, susceptibility to
Cone dystrophy
Leber congenital amaurosis
Retinitis pigmentosa, late-onset dominant
Diabetes mellitus, noninsulin-dependent
Hyperferritinemia-cataract syndrome
Hypogonadism, hypergonadotropic
Retinitis pigmentosa, autosomal dominant
Ectrodactyly, ectodermal dysplasia, cleft lip/palate

Ataxia, cerebellar, Cayman type
Convulsions, familial febrile
Guanidinoacetate methyltransferase deficiency
Muscular dystrophy
Hirschsprung disease
Peutz-Jeghers syndrome
Leukemia, acute lymphoblastic
Atherosclerosis, susceptibility to
Malaria, cerebral, susceptibility to
Sicca syndrome
Glioblastoma
Thyroid carcinoma, nonmedullary
Low density lipoprotein receptor
Hypercholesterolemia, familial
Arteriopathy, cerebral
Pseudoachondroplasia
Epiphyseal dysplasia, multiple
Severe combined immunodeficiency disease
Hair color, brown
Leigh syndrome
MHC class II deficiency
Exostoses, multiple, type 3
Benign familial infantile convulsions
Leukemia/lymphoma, B-cell
Spondylocostal dysostosis, autosomal recessive
Prostate-specific antigen
Spastic paraplegia , autosomal dominant
Cystinuria, types II and III
Nephrosis, congenital, Finnish type
Generalized epilepsy with febrile seizures plus
Ovarian carcinoma
Microcephaly, autosomal recessive
Hyperlipoproteinemia, types Ib and III
Myocardial infarction susceptibility
Cytochrome P450 (coumarin resistance)
Nicotine addiction, protection from
X-ray repair
Excision repair
Xeroderma pigmentosum, group D
Trichothiodystrophy
DNA ligase I deficiency
Polio virus receptor
Herpes virus entry mediator B
Glutaricaciduria, type IIB
Colorectal cancer
Leukemia, T-cell acute lymphoblastic
Shaw-related subfamily genes
Melanoma inhibitory activity
Cardiomyopathy, familial hypertrophic

20

63 million base pairs

Creutzfeldt-Jakob disease
Gerstmann-Straussler disease
Insomnia, fatal familial
Pantothenate kinase associated neurodegeneration
Alagille syndrome
Corneal dystrophy
Inhibitor of DNA binding, dominant negative
Facial anomalies syndrome
Gigantism
Retinoblastoma
Rous sarcoma
Colon cancer
Galactosialidosis
Severe combined immunodeficiency
Hemolytic anemia
Obesity/hyperinsulinism
Pseudohypoparathyroidism, type Ia
McCune-Albright polyostotic fibrous dysplasia
Somatotrophinoma
Pituitary ACTH secreting adenoma
Shah-Waardenburg syndrome

Diabetes insipidus, neurohypophyseal
McKusick-Kaufman syndrome
Cerebral amyloid angiopathy
Thrombophilia
Myocardial infarction, susceptibility to
Huntington-like neurodegenerative disorder
Anemia, congenital dyserythropoietic
Acromesomelic dysplasia, Hunter-Thompson type
Brachydactyly, type C
Chondrodysplasia, Grebe type
Hemolytic anemia
Myeloid tumor suppressor
Breast cancer
Maturity Onset Diabetes of the Young, type 1
Diabetes mellitus, noninsulin-dependent
Graves disease, susceptibility to
Epilepsy, nocturnal frontal lobe and benign neonatal, type 1
Epiphyseal dysplasia, multiple
Electro-encephalographic variant pattern
Pseudohypoparathyroidism, type IB

21

46 million base pairs

Coxsackie and adenovirus receptor
Amyloidosis, cerebroarterial, Dutch type
Alzheimer disease, APP-related
Schizophrenia, chronic
Usher syndrome, autosomal recessive
Amytrophic lateral sclerosis
Oligomycin sensitivity
Jervell and Lange-Nielsen syndrome
Long QT syndrome
Down syndrome cell adhesion molecule
Homocystinuria
Cataract, congenital, autosomal dominant
Deafness, autosomal recessive
Myxovirus (influenza) resistance
Leukemia, acute myeloid

Myeloproliferative syndrome, transient
Leukemia, transient, of Down syndrome
Enterokinase deficiency
Multiple carboxylase deficiency
T-cell lymphoma invasion and metastasis
Mycobacterial infection, atypical
Down syndrome (critical region)
Autoimmune polyglandular disease, type I
Bethlem myopathy
Epilepsy, progressive myoclonic
Holoprosencephaly, alobar
Knobloch syndrome
Hemolytic anemia
Breast cancer
Platelet disorder, with myeloid malignancy

22

49 million base pairs

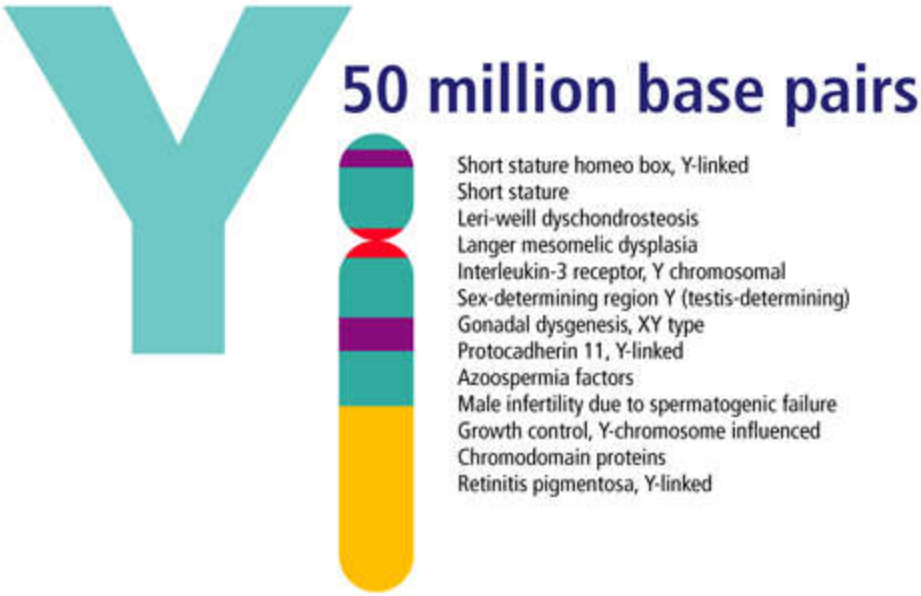
Cat eye syndrome
Thrombophilia
Rhabdoid predisposition syndrome, familial
Schizophrenia susceptibility locus
Bernard-Soulier syndrome, type B
Giant platelet disorder, isolated
Hyperprolinemia, type I
Cataract, cerulean, type 2
Leukemia, chronic myeloid
Ewing sarcoma
Neuroepithelioma
Li-Fraumeni syndrome
Fechtner syndrome
Amyotrophic lateral sclerosis
Pulmonary alveolar proteinosis
Meningioma, SIS-related
Dermatofibrosarcoma protuberans
Giant-cell fibroblastoma
Spinocerebellar ataxia
Waardenburg-Shah syndrome
Yemenite deaf-blind hypopigmentation syndrome
Debrisoquine sensitivity
Polycystic kidney disease
Leukodystrophy, metachromatic
Myoneurogastrointestinal encephalomyopathy
Leukoencephalopathy

DiGeorge syndrome
Velocardiofacial syndrome
Schindler disease
Kanzaki disease
NAGA deficiency, mild
Epilepsy, partial
Glutathioninuria
Opitz G syndrome, type II
Ubiquitin fusion degradation
Transcobalamin deficiency
Heme oxygenase deficiency
Manic Fringe
Leukemia inhibitory factor
Sorsby fundus dystrophy
Neurofibromatosis, type 2
Meningioma, NF2-related, sporadic
Schwannoma, sporadic
Neurolemmomatosis
Malignant mesothelioma, sporadic
Deafness, autosomal dominant
Colorectal cancer
Cardioencephalomyopathy, fatal infantile
Adenylosuccinase deficiency
Autism, succinylpurinemic
Glucose/galactose malabsorption
Benzodiazepine receptor, peripheral type
Methemoglobinemia, types I and II

153 million base pairs

Short stature, idiopathic familial
Leri-Weill dyschondrosteosis
Langer mesomelic dysplasia
Leukemia, acute myeloid, M2 type
Chondrodysplasia punctata
Kallmann syndrome
Ocular albinism, Nettleship-Falls type
Oral-facial-digital syndrome
Nance-Horan cataract-dental syndrome
Heterocellular hereditary persistence of fetal hemoglobin
Pyruvate dehydrogenase deficiency
Glycogen storage disease
Coffin-Lowry syndrome
Mental retardation
Spondyloepiphyseal dysplasia tarda
Paroxysmal nocturnal hemoglobinuria
Infantile spasm syndrome
Aicardi syndrome
Deafness, sensorineural
Simpson-Golabi-Behmel syndrome, type 2
Adrenal hypoplasia, congenital
Dosage-sensitive sex reversal
Deafness, congenital sensorineural
Retinitis pigmentosa
Wilson-Turner syndrome
Cone dystrophy
Aland island eye disease (ocular albinism)
Optic atrophy
Night blindness, congenital stationary, type 1
Erythroid-potentiating activity
Arthrogryposis multiplex congenita
Night blindness, congenital stationary, type 2
Brunner syndrome
Wiskott-Aldrich syndrome
Thrombocytopenia
Dent disease
Nephrolithiasis, type I
Hypophosphatemia, type III
Proteinuria
Anemia, sideroblastic/hypochromic
Cerebellar ataxia
Renal cell carcinoma, papillary
Diabetes mellitus, insulin-dependent
Sutherland-Haan syndrome
Cognitive function, social
Mental retardation, nonspecific
Menkes disease
Occipital horn syndrome
Cutis laxa, neonatal
FG syndrome
Immunodeficiency, moderate and severe
Miles-Carpenter syndrome
Charcot-Marie-Tooth neuropathy, dominant
Mental retardation
X-inactivation center
Premature ovarian failure
Arts syndrome
Cleft palate and/or ankyloglossia
Megalocornea
Epilepsy (Juberg-Hellman syndrome)
Pelizaeus-Merzbacher disease
Spastic paraplegia
Alport syndrome
Cowchock syndrome
Hypertrichosis, congenital generalized
Ptosis, hereditary congenital
Apoptosis inhibitor
Panhypopituitarism
Thoracoabdominal syndrome
Simpson-Golabi-Behmel syndrome, type 1
Split hand/foot malformation, type 2
Hypoparathyroidism
Mental retardation, Shashi type
Lesch-Nyhan syndrome
HPRT-related gout
Lowe syndrome
Borjeson-Forssman-Lehmann syndrome
Testicular germ cell tumor
Hemophilia B
Warfarin sensitivity
Osseous dysplasia (male lethal), digital
Adrenoleukodystrophy
Adrenomyeloneuropathy
Colorblindness, blue monochromatic
Cardiac valvular dysplasia
Emery-Dreifuss muscular dystrophy
Heterotopia, periventricular
Favism
Hemolytic anemia
Colorblindness, green cone pigment
Incontinentia pigmenti, type II
Hydrocephalus
MASA syndrome
Spastic paraplegia
Rett syndrome
Mature T-cell proliferation
Myopia (Bornholm eye disease)
Mental retardation with psychosis
Endocardial fibroelastosis

Hodgkin disease susceptibility, pseudoautosomal
Ichthyosis
Microphthalmia, dermal aplasia, and sclerocornea
Episodic muscle weakness
Mental retardation
Ocular albinism and sensorineural deafness
Amelogenesis imperfecta
Charcot-Marie-Tooth disease, recessive
Keratosis follicularis spinulosa decalvans
Hypophosphatemia, hereditary
Partington syndrome
Retinoschisis
Gonadal dysgenesis, XY female type
Mental retardation, non-dysmorphic
Agammaglobulinemia, type 2
Craniofrontonasal dysplasia
Opitz G syndrome, type I
Pigment disorder, reticulate
Melanoma
Duchenne muscular dystrophy
Becker muscular dystrophy
Cardiomyopathy, dilated
Chronic granulomatous disease
Snyder-Robinson mental retardation
Norrie disease
Exudative vitreoretinopathy
Coats disease
Renpenning syndrome
Retinitis pigmentosa, recessive
Mental retardation, nonspecific and syndromic
Dyserythropoietic anemia with thrombocytopenia
Chondrodysplasia punctata, dominant
Autoimmunity-immunodeficiency syndrome
Renal cell carcinoma, papillary
Faciogenital dysplasia (Aarskog-Scott syndrome)
Chorioathetosis with mental retardation
Sarcoma, synovial
Prieto syndrome
Spinal muscular atrophy, lethal infantile
Migraine, familial typical
Androgen insensitivity
Spinal and bulbar muscular atrophy
Prostate cancer
Perineal hypospadias
Breast cancer, male, with Reifenstein syndrome
Ectodermal dysplasia, anhidrotic
Alpha-thalassemia/mental retardation
Juberg-Marsidi syndrome
Sutherland-Haan syndrome
Smith-Fineman-Myers syndrome
Hemolytic anemia
Myoglobinuria/hemolysis
Wieacker-Wolff syndrome
Torsion dystonia-parkinsonism, Filipino type
Leukemia, myeloid/lymphoid or mixed-lineage
Anemia, sideroblastic, with ataxia
Allan-Herndon syndrome
Deafness
Choroideremia
Agammaglobulinemia
Fabry disease
Mohr-Tranebjaerg syndrom
Jensen syndrome
Lissencephaly
Bazex syndrome
Mental retardation with growth hormone deficiency
Mental retardation, South African type
Lymphoproliferative syndrome
X inactivation, familial skewed
Pettigrew syndrome
Gustavson mental retardation syndrome
Immunodeficiency, with hyper-IgM
Retinitis pigmentosa
Wood neuroimmunologic syndrome
Heterotaxy, visceral
Albinism-deafness syndrome
Cone dystrophy, progressive
Prostate cancer susceptibility
Fragile X mental retardation
Epidermolysis bullosa, macular type
Diabetes insipidus, nephrogenic
Cancer/testis antigen
Dyskeratosis
Hemophilia A
Hunter syndrome
Mucopolysaccharidosis
Intestinal pseudoobstruction, neuronal
Melanoma antigens
Mental retardation-skeletal dysplasia
Myotubular myopathy
Otopalatodigital syndrome, type I
Colorblindness, red cone pigment
Goeminne TKCR syndrome
Waisman parkinsonism-mental retardation
Barth syndrome
Cardiomyopathy, dilated
Noncompaction of left ventricular myocardium
Von Hippel-Lindau binding protein


Y
50 million base pairs
Short stature homeo box, Y-linked
Short stature
Leri-weill dyschondrosteosis
Langer mesomelic dysplasia
Interleukin-3 receptor, Y chromosomal
Sex-determining region Y (testis-determining)
Gonadal dysgenesis, XY type
Protocadherin 11, Y-linked
Azoospermia factors
Male infertility due to spermatogenic failure
Growth control, Y-chromosome influenced
Chromodomain proteins
Retinitis pigmentosa, Y-linked

Beta Chromosomes

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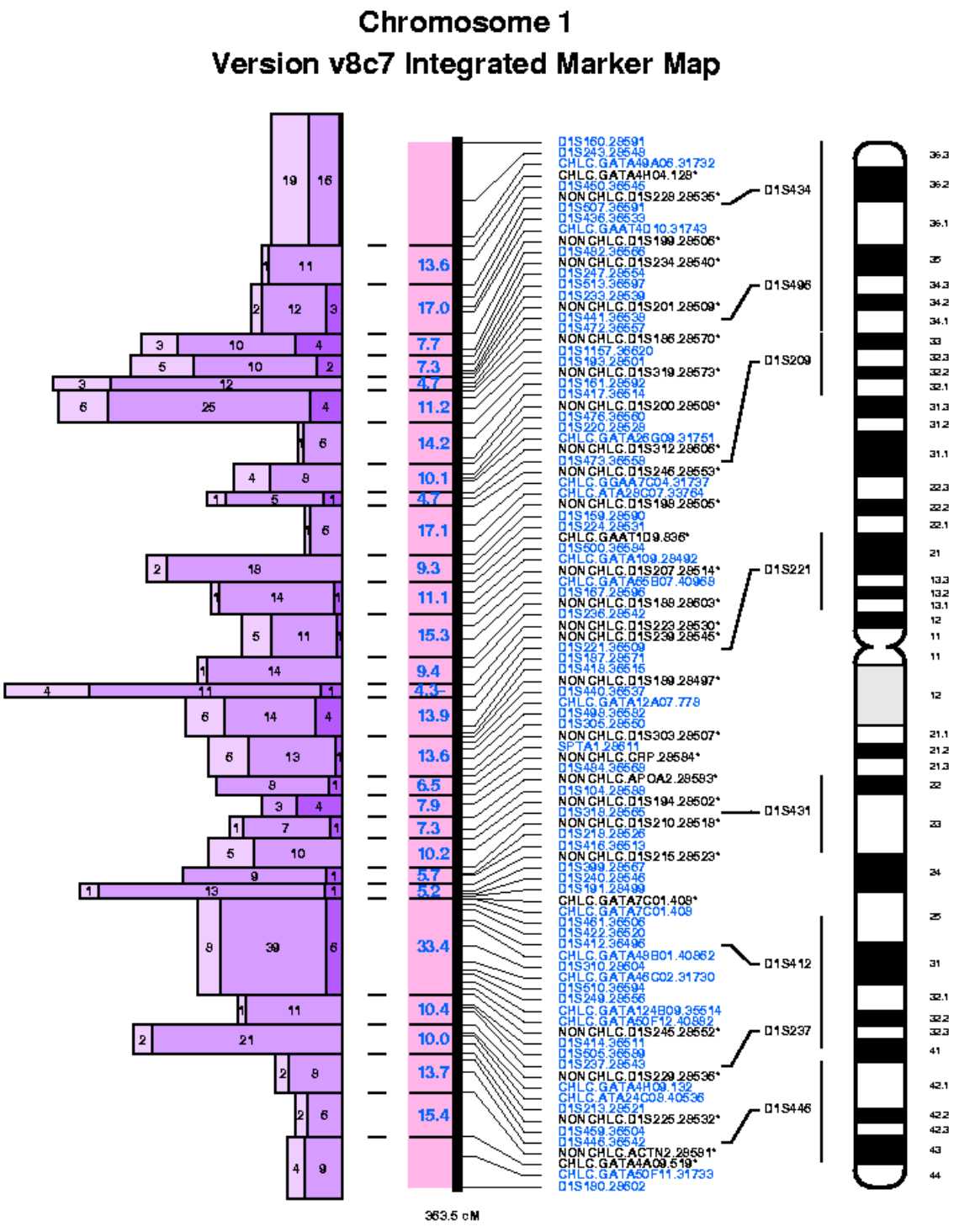
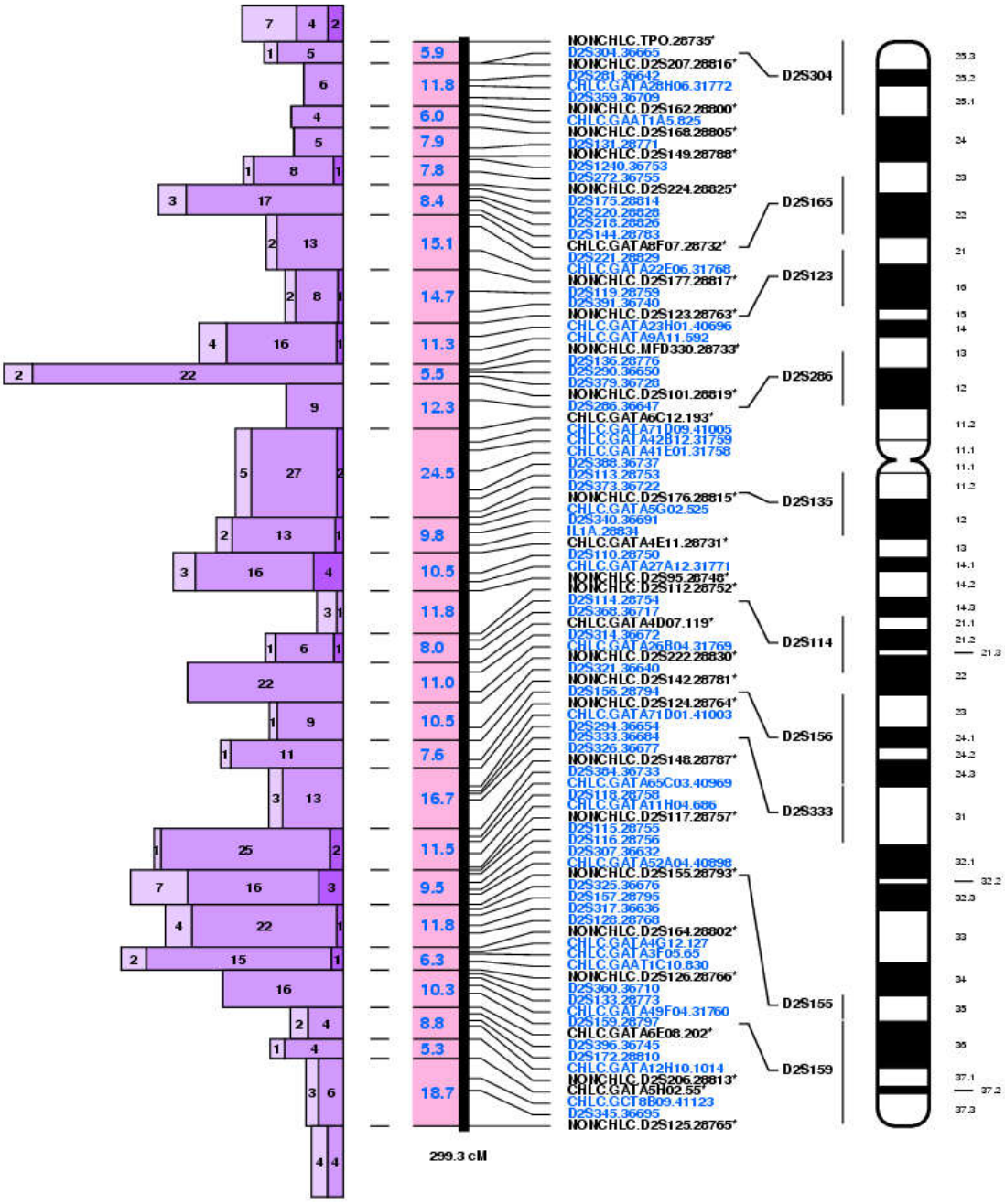


Chromosome 2
Version v8c7 Integrated Marker Map



Chromosome 3
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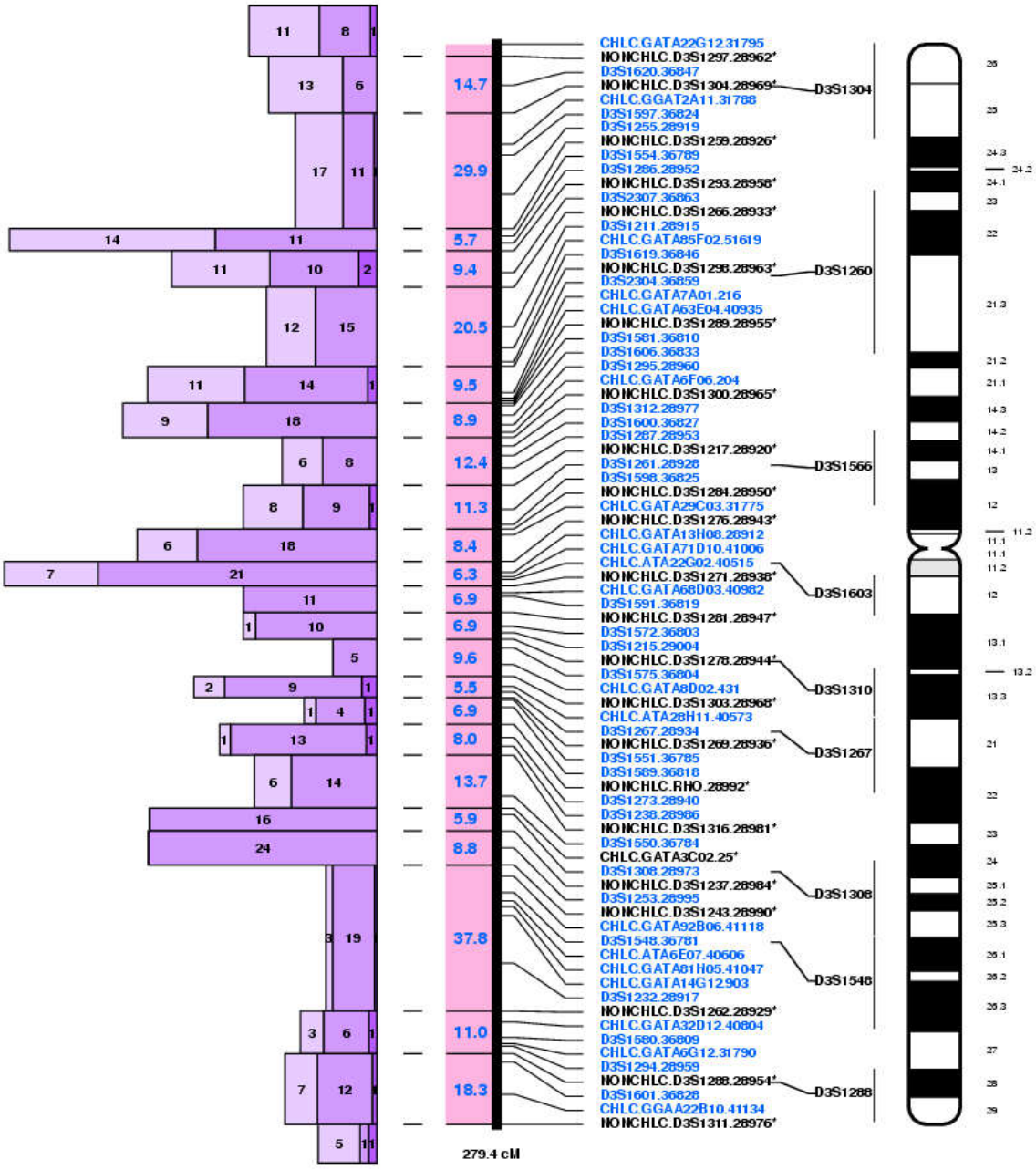

Chromosome 4
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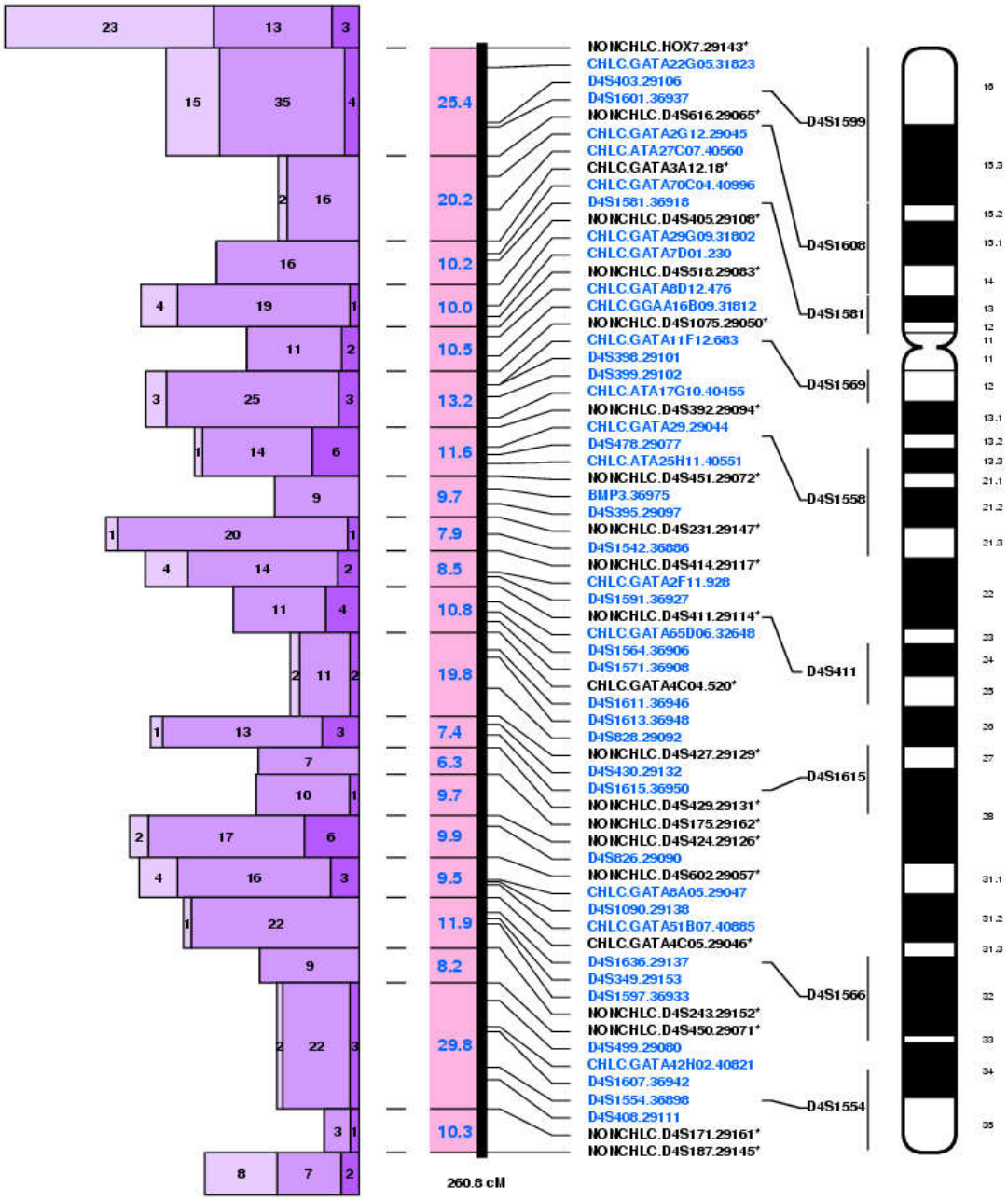

Chromosome 5
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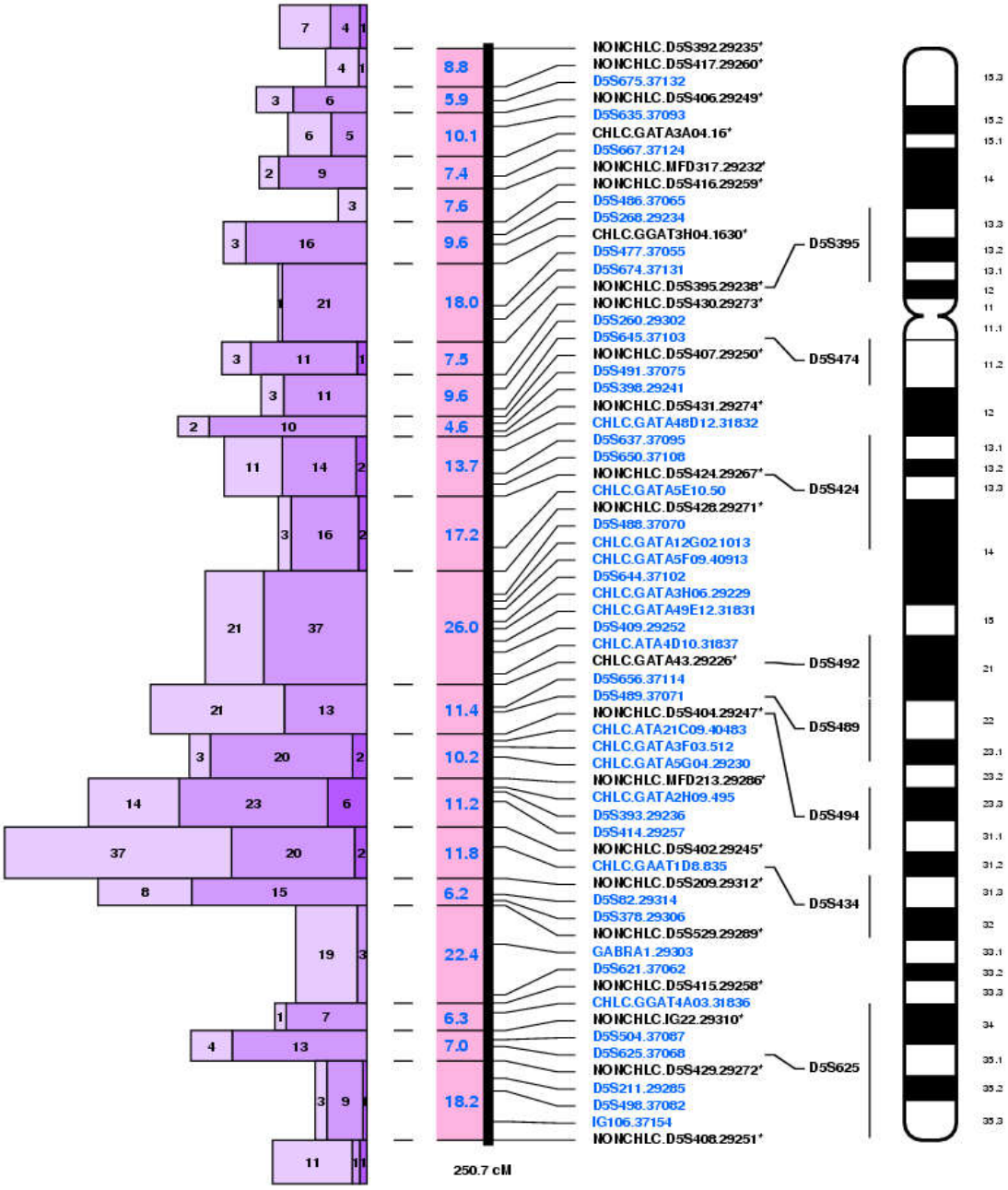
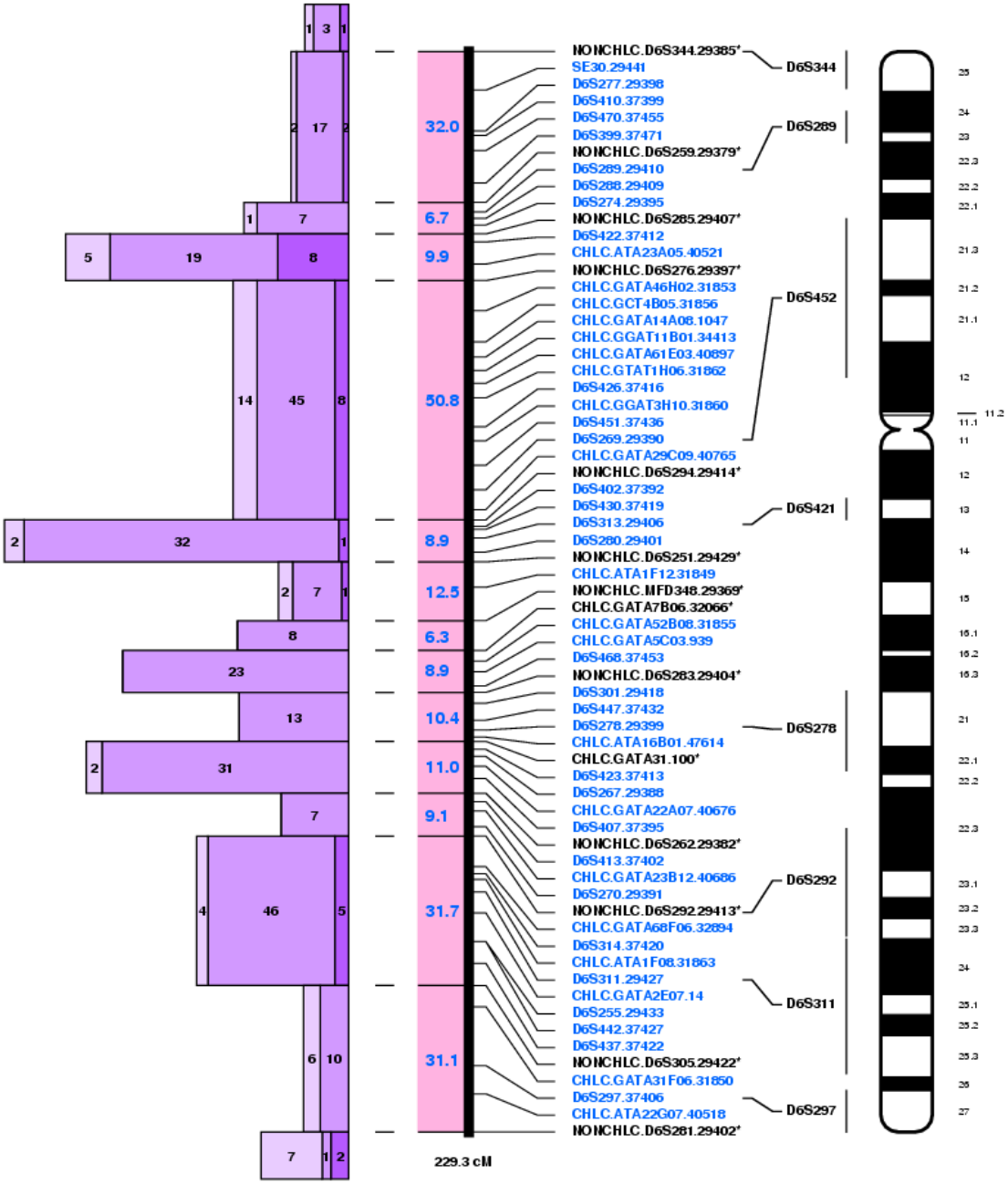
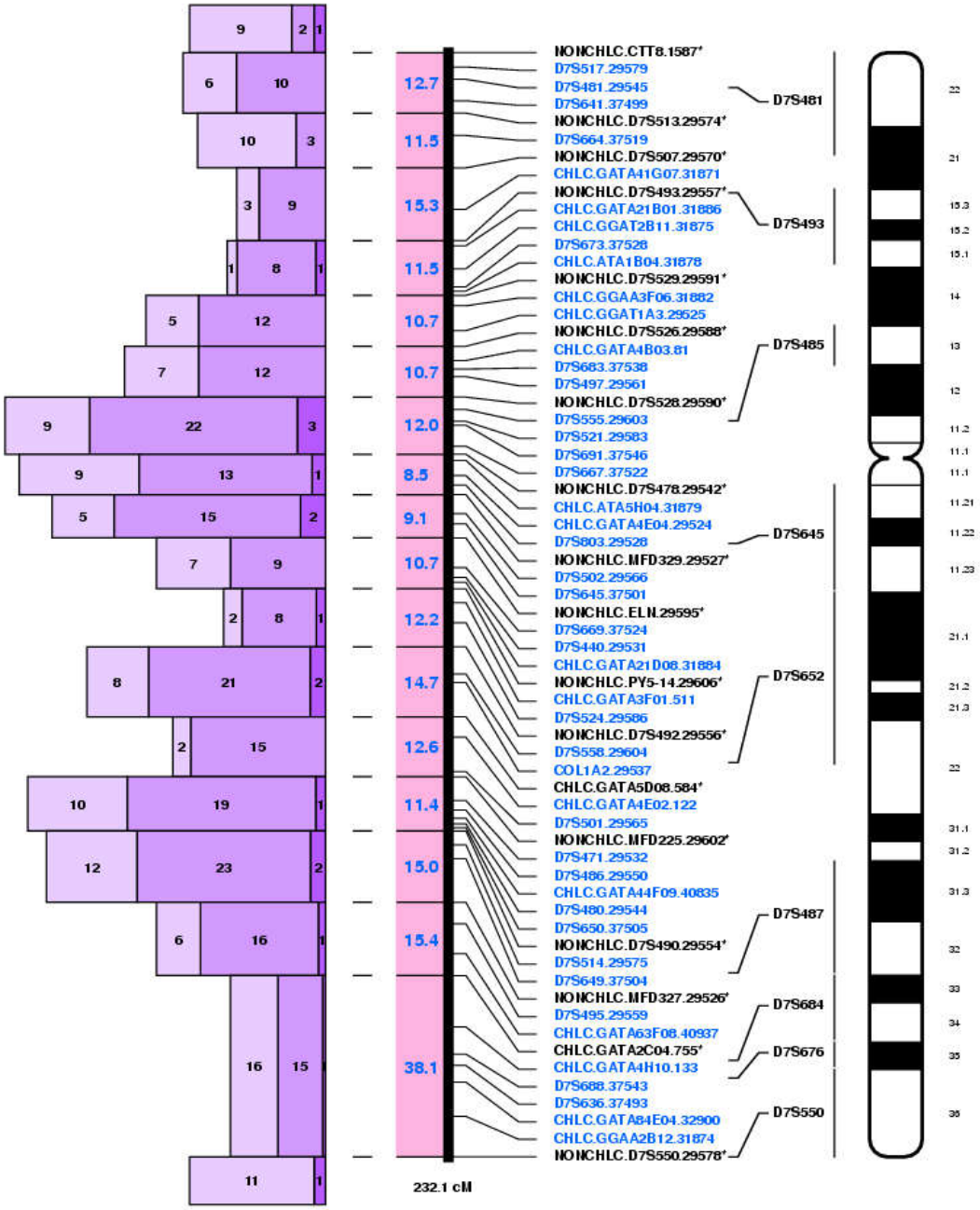


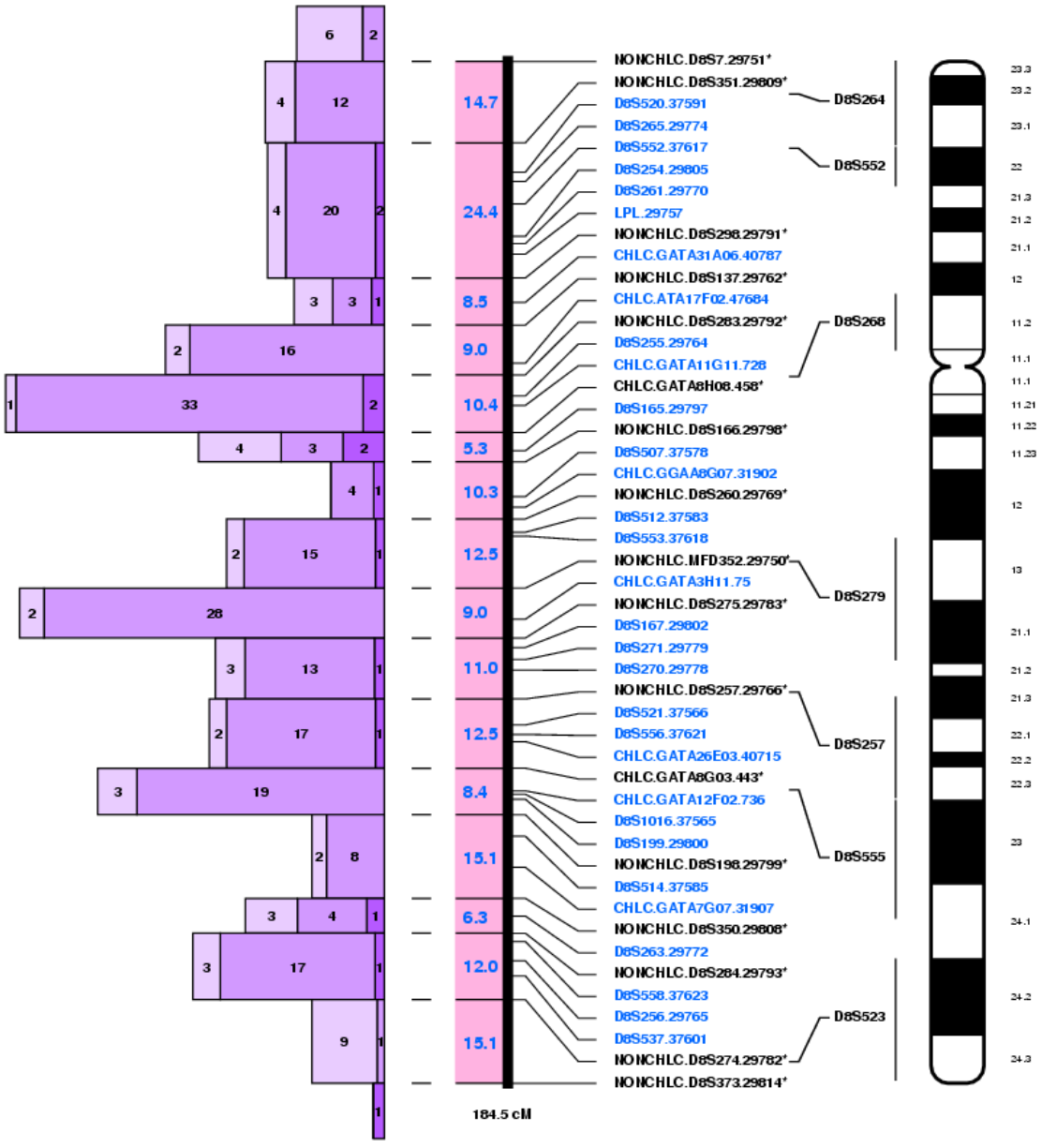
Chromosome 6
Version v8c7 Integrated Marker Map



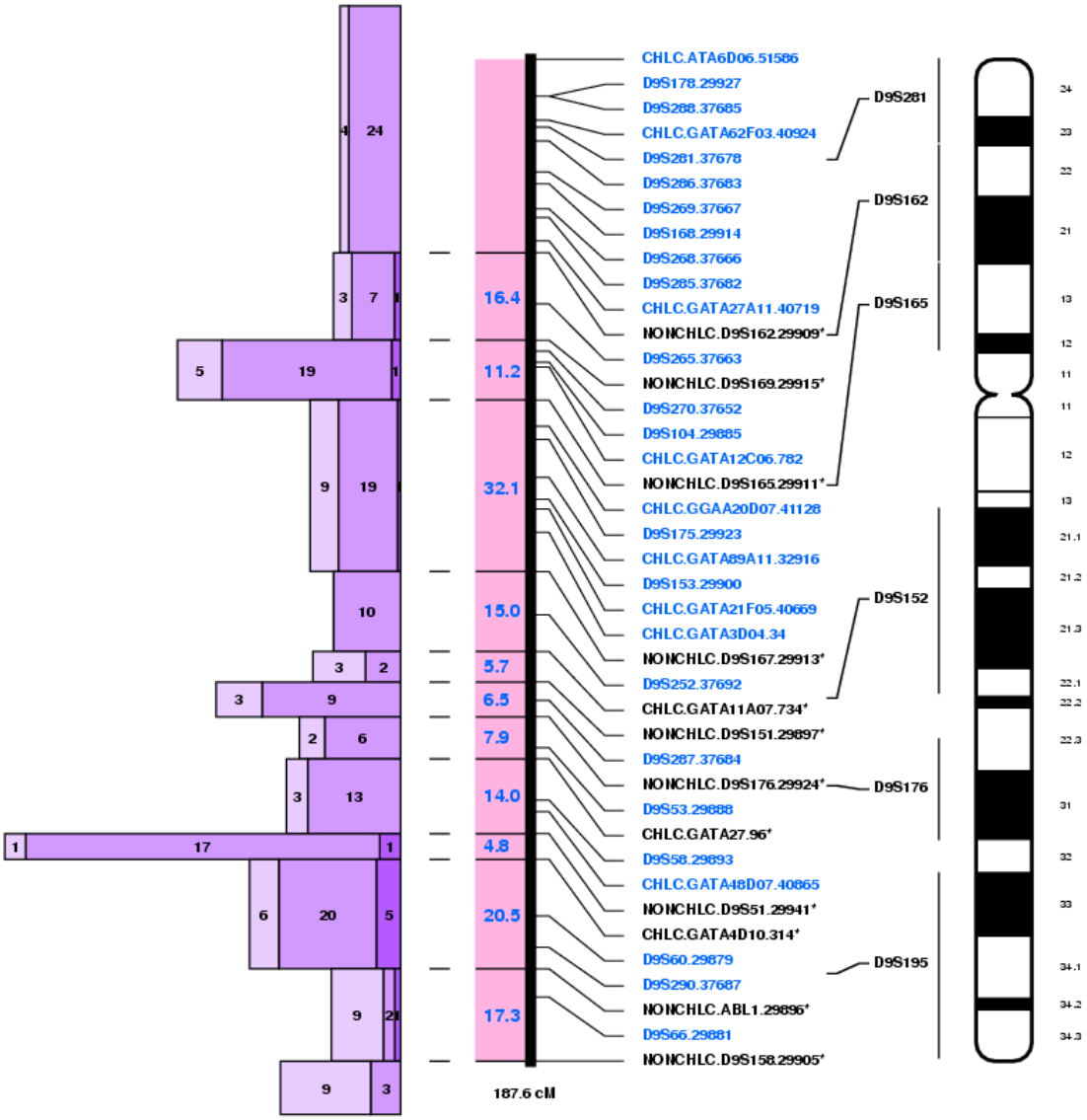
Chromosome 7
Version v8c7 Integrated Marker Map



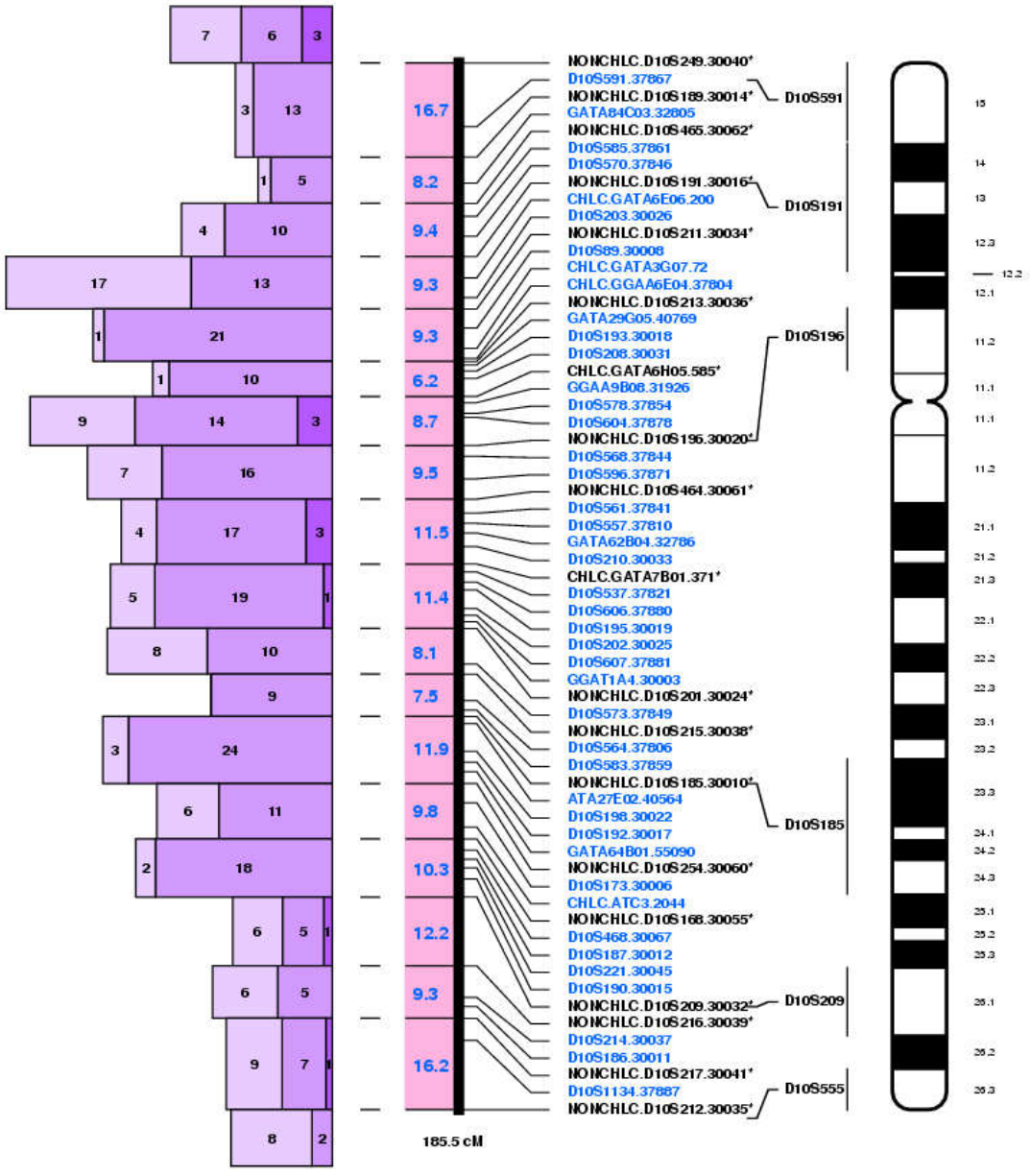
Chromosome 8
Version v8c7 Integrated Marker Map



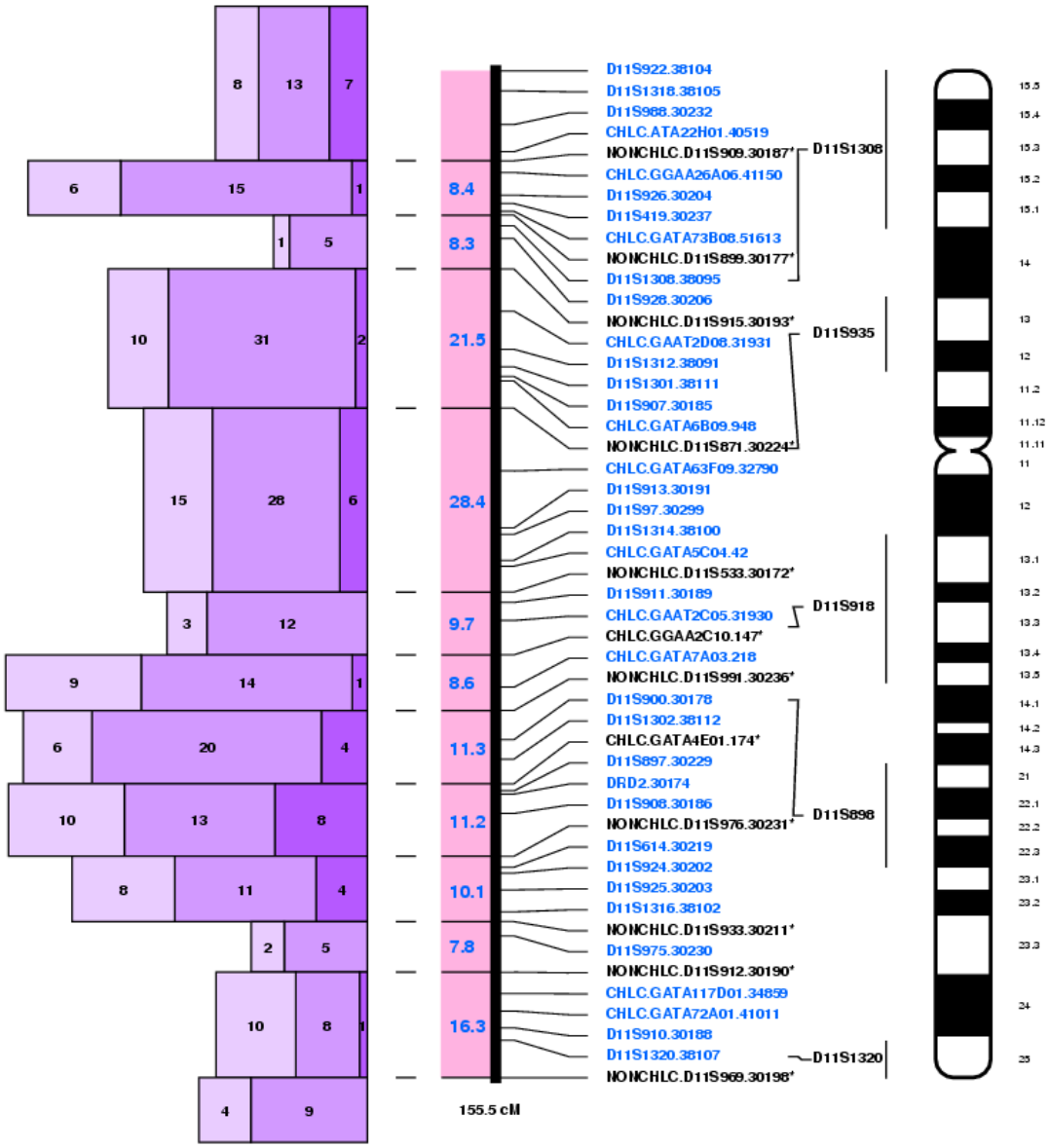
Chromosome 9
Version v8c7 Integrated Marker Map



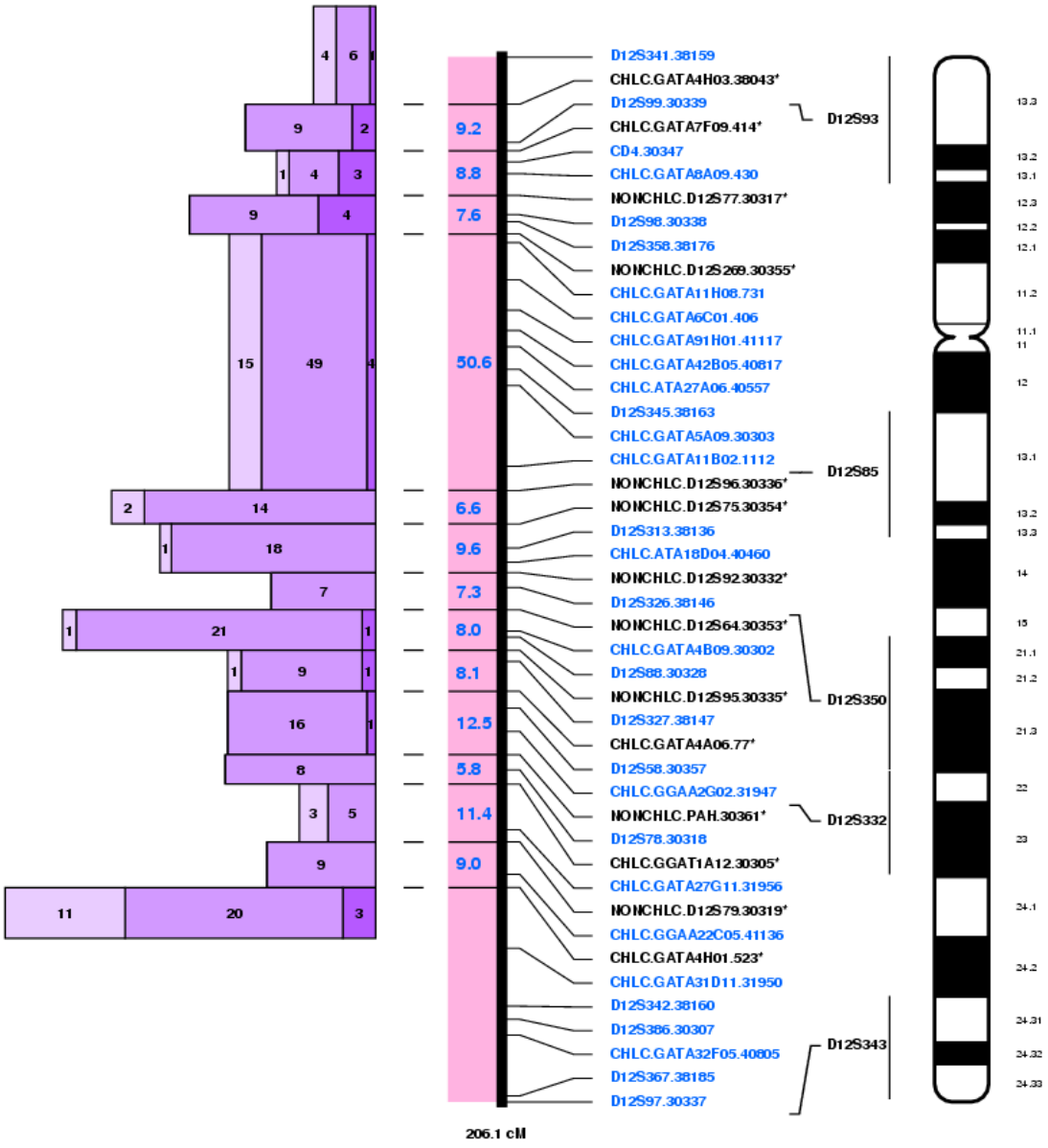
Chromosome 10
Version v8c7 Integrated Marker Map



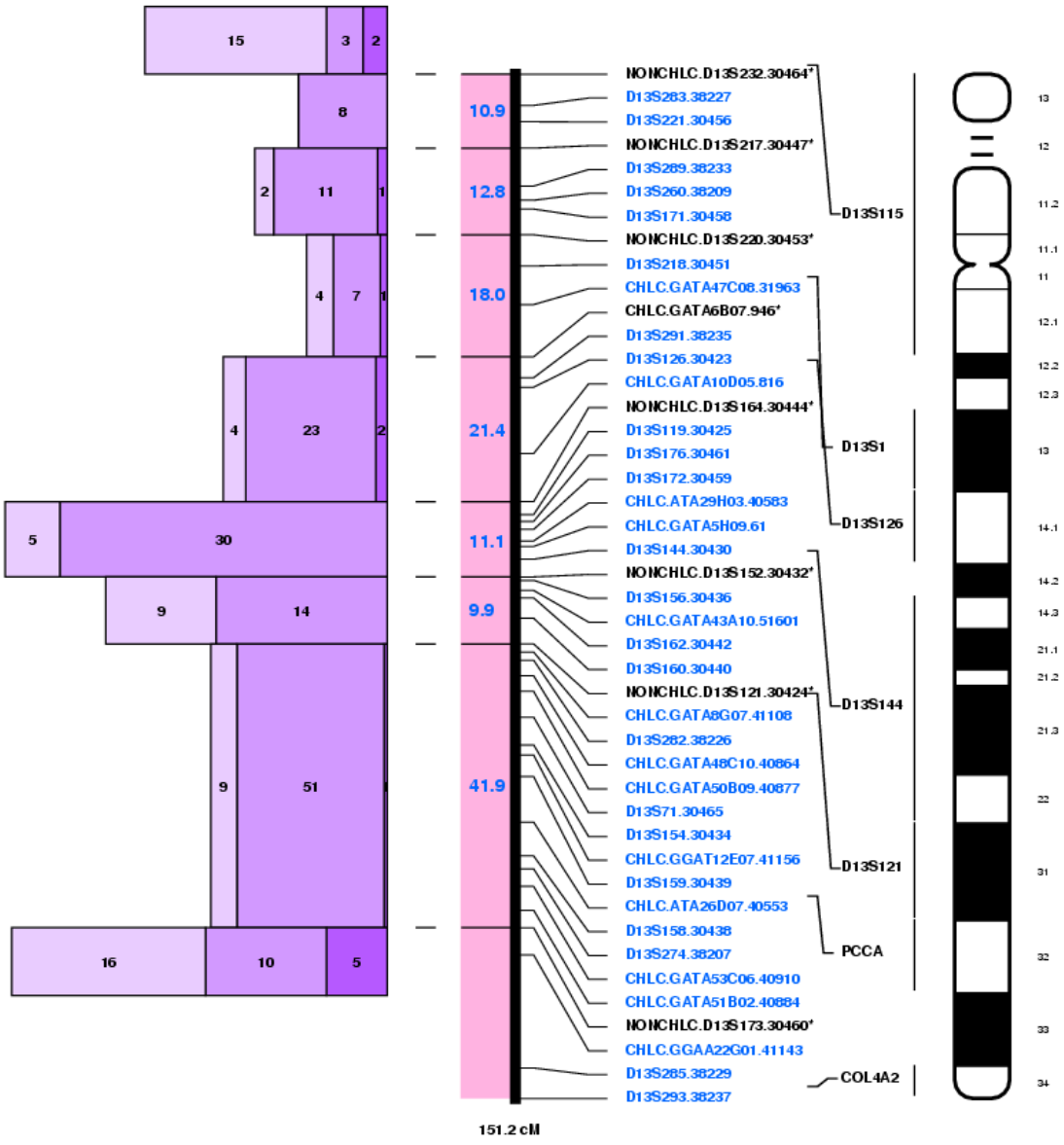
Chromosome 11
Version v8c7 Integrated Marker Map



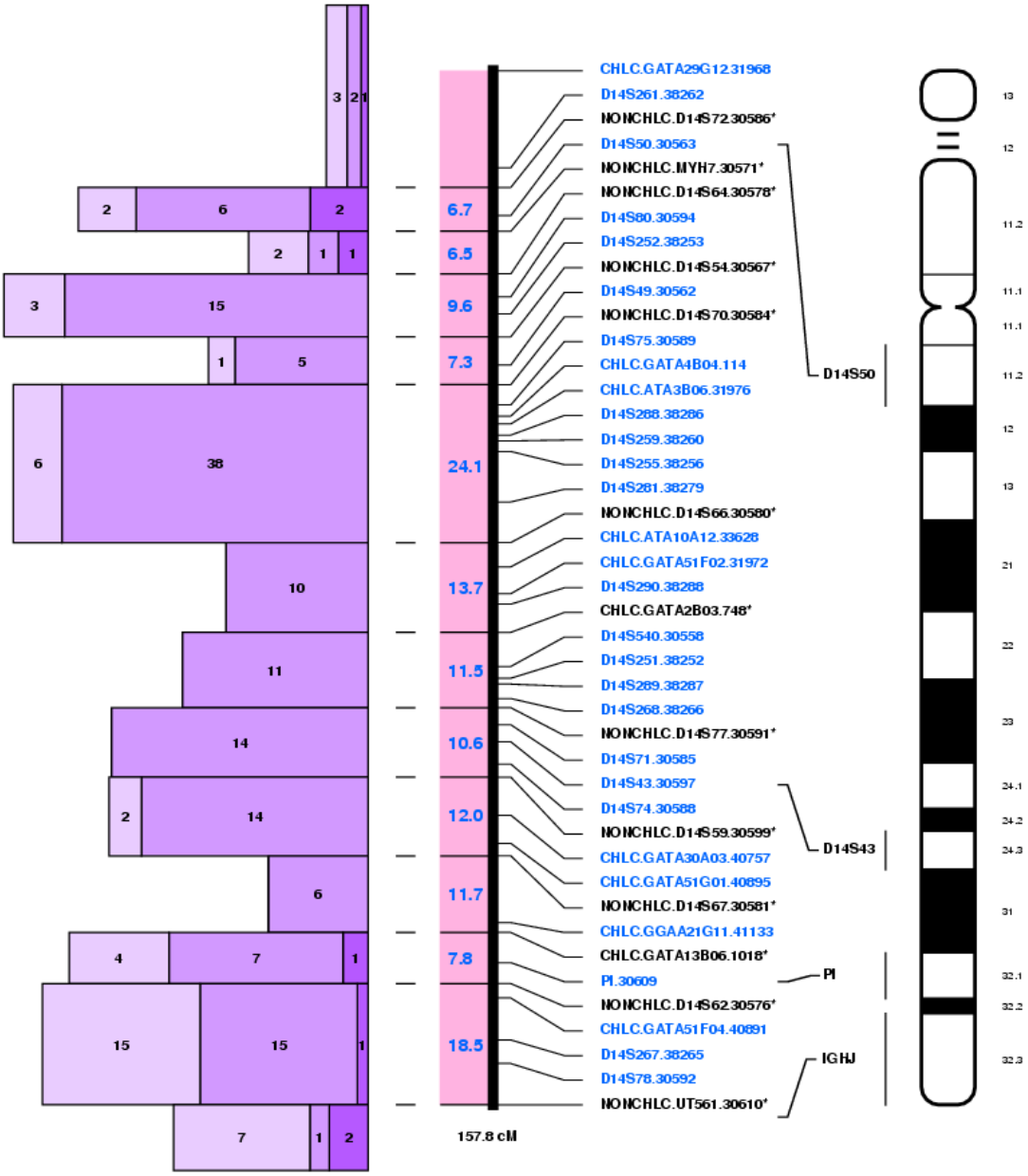
Chromosome 12
Version v8c7 Integrated Marker Map



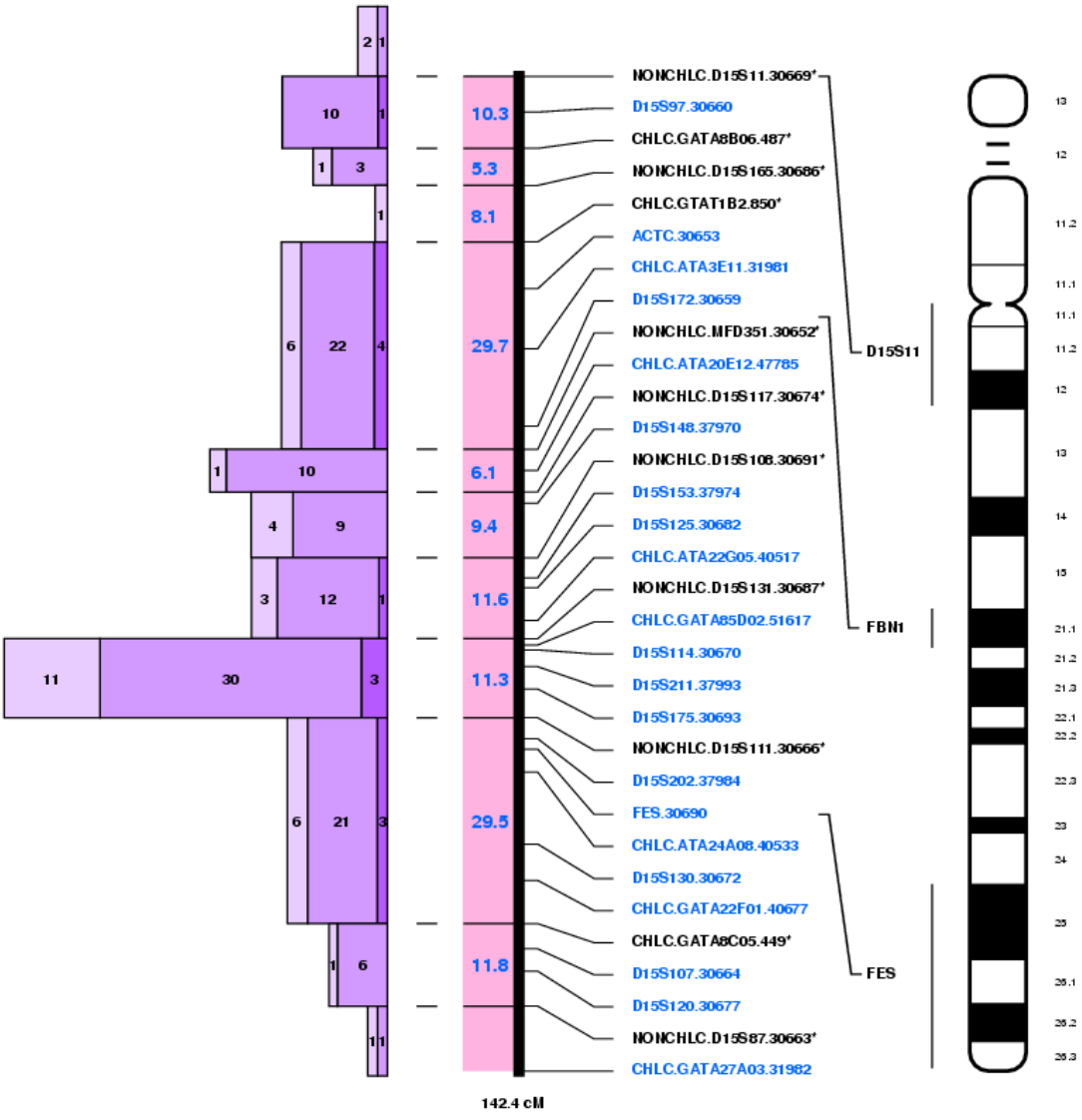
Chromosome 13
Version v8c7 Integrated Marker Map



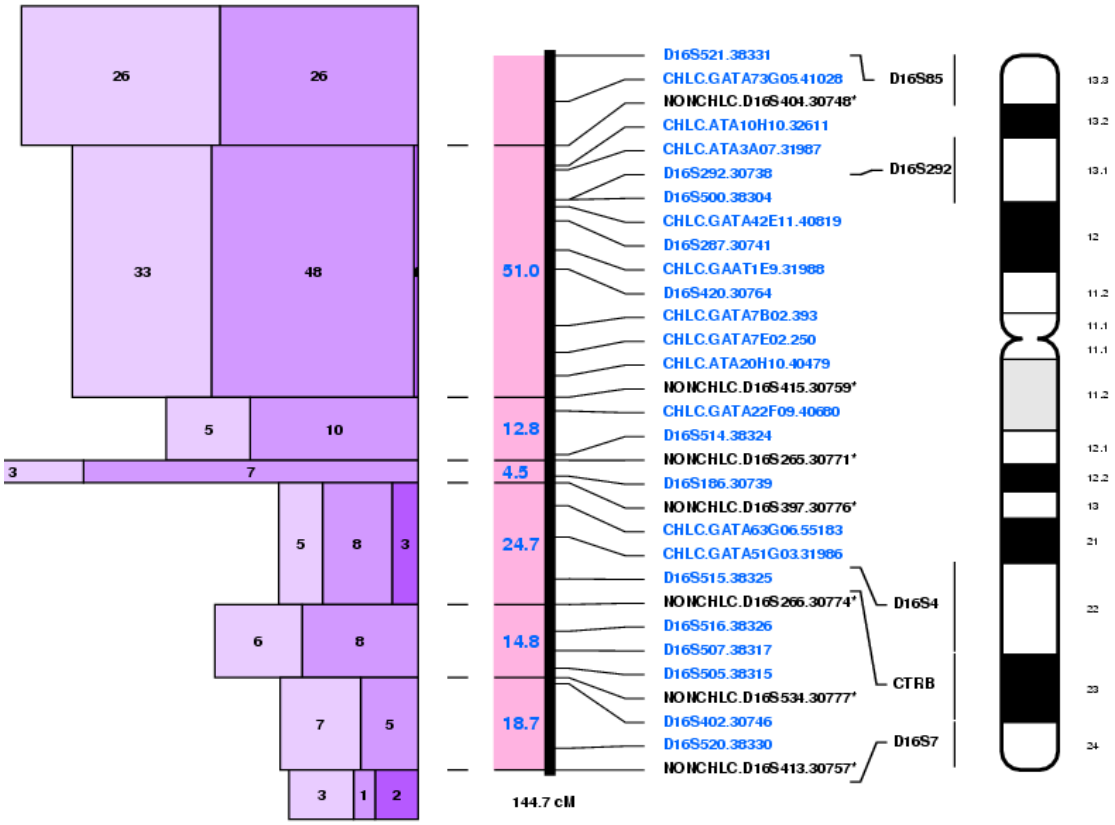
Chromosome 14
Version v8c7 Integrated Marker Map



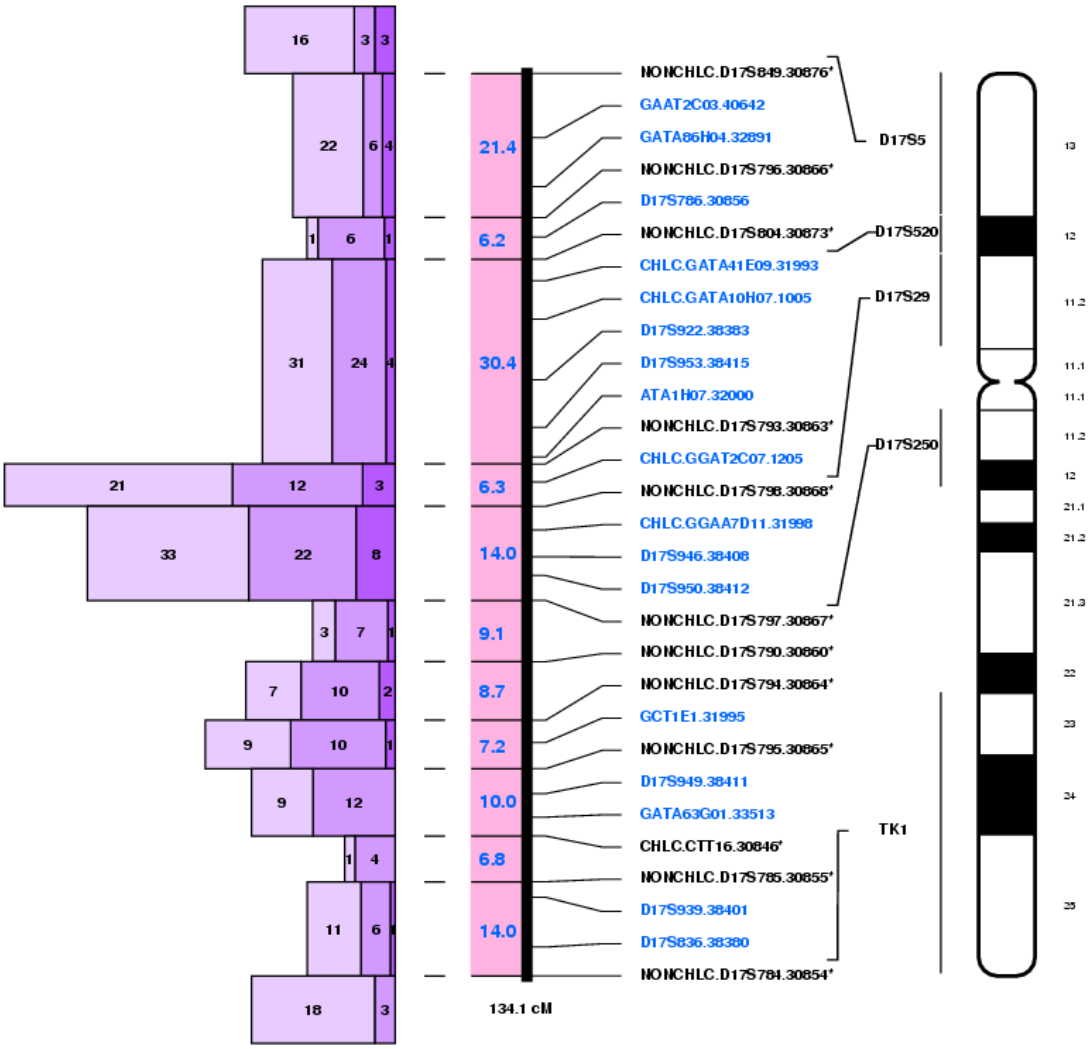
Chromosome 15
Version v8c7 Integrated Marker Map



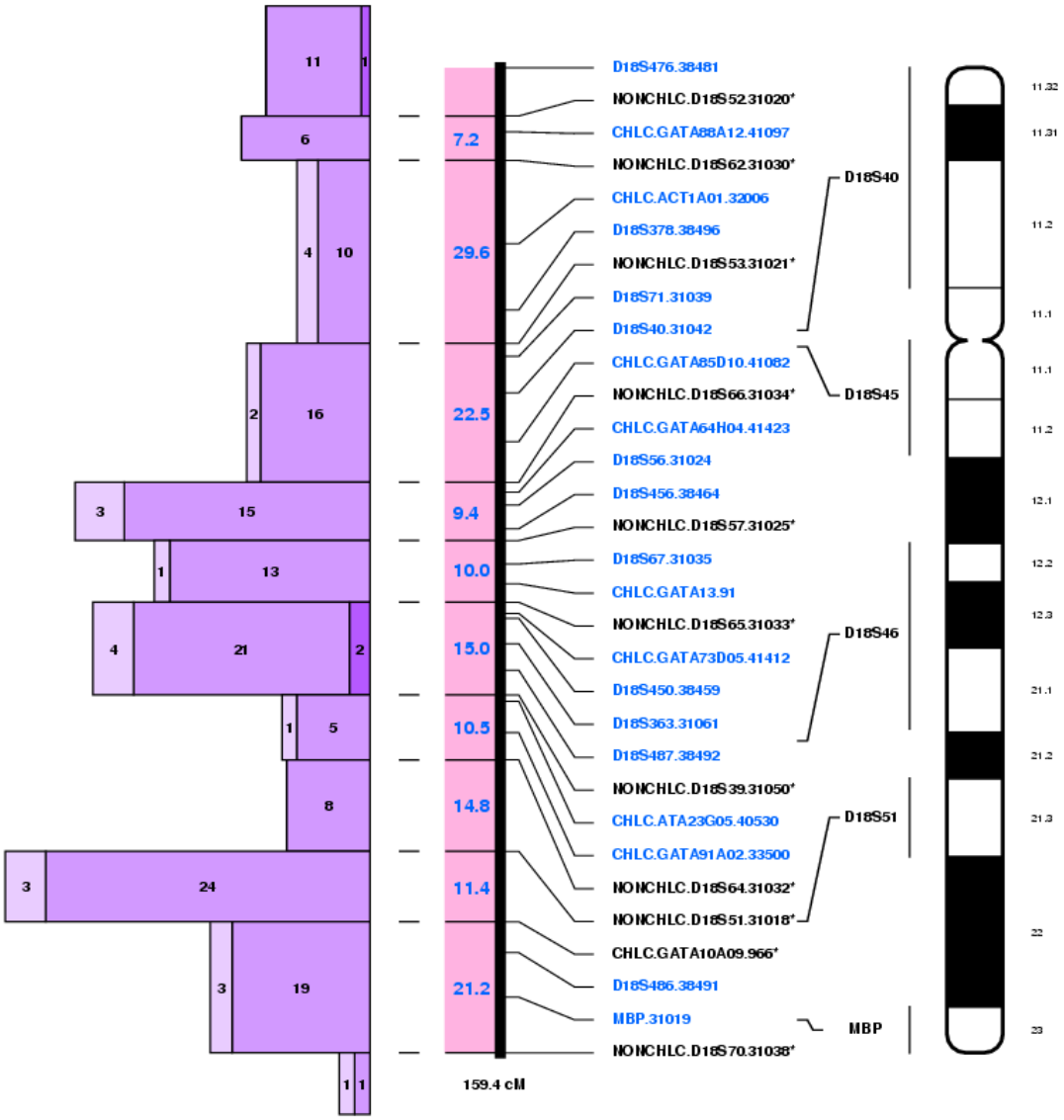
Chromosome 16
Version v8c7 Integrated Marker Map



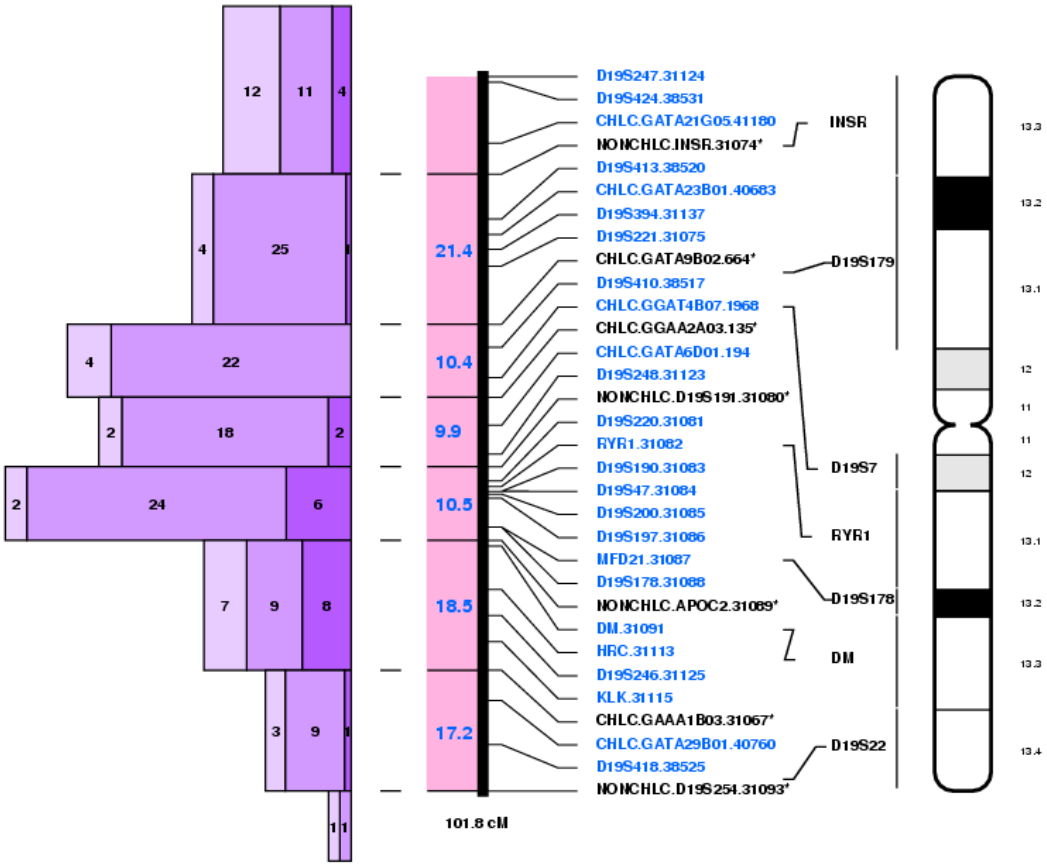
Chromosome 17
Version v8c7 Integrated Marker Map



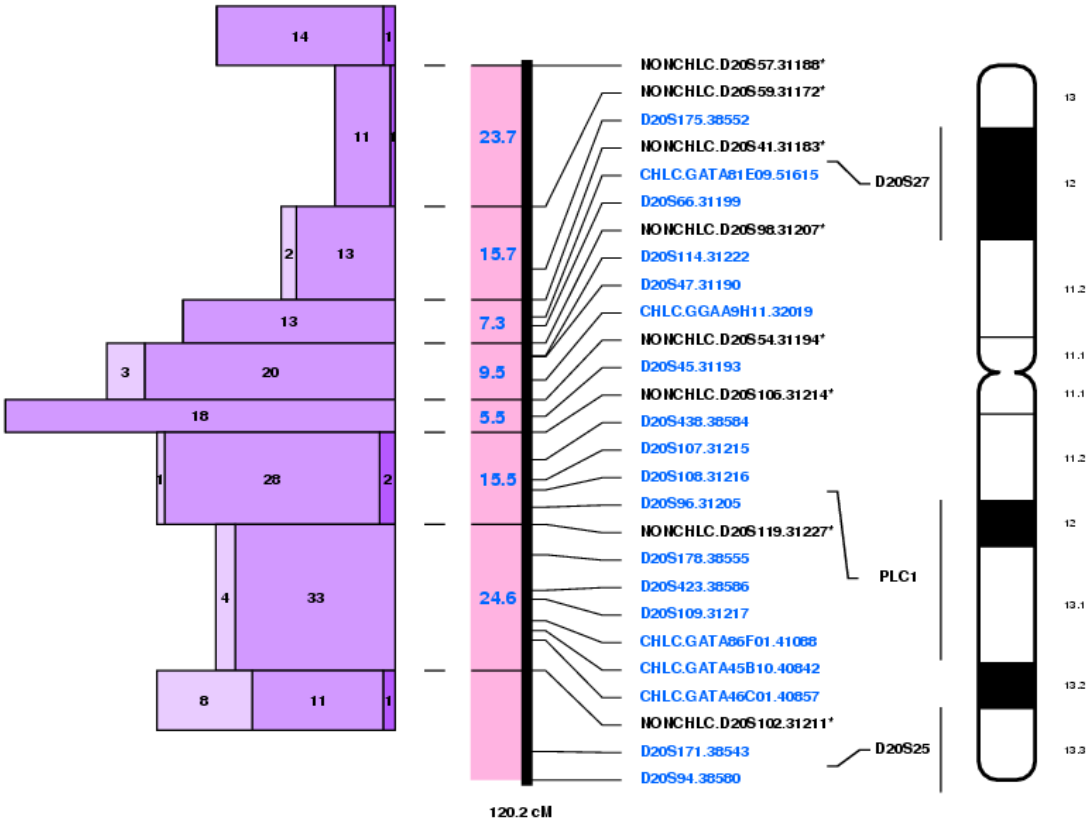
Chromosome 18
Version v8c7 Integrated Marker Map



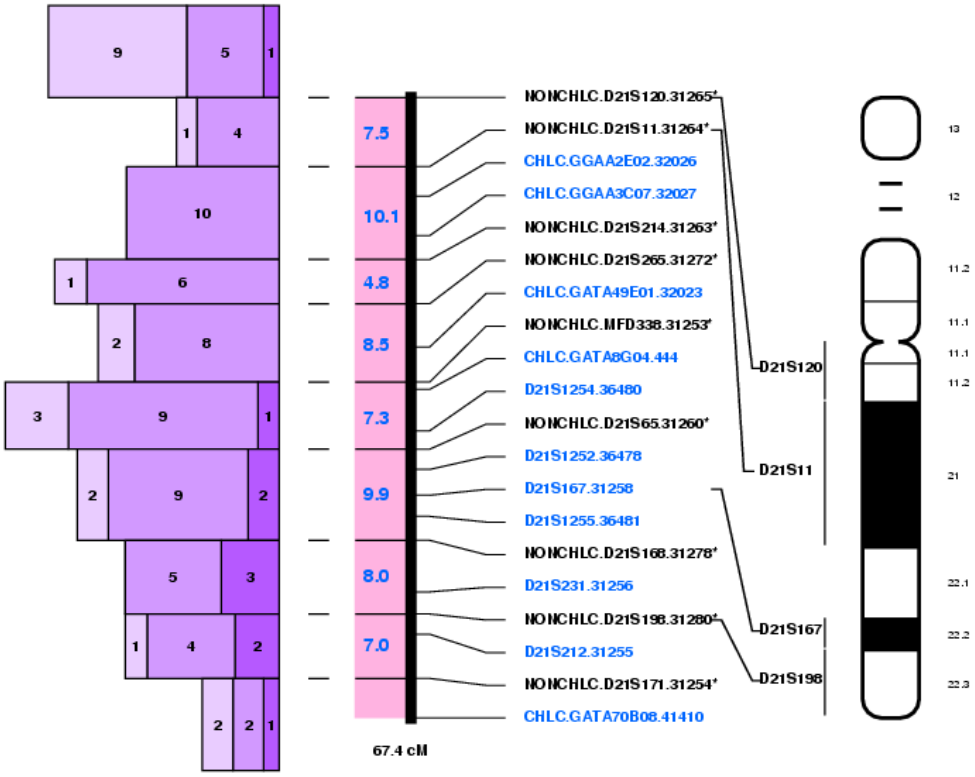
Chromosome 19
Version v8c7 Integrated Marker Map



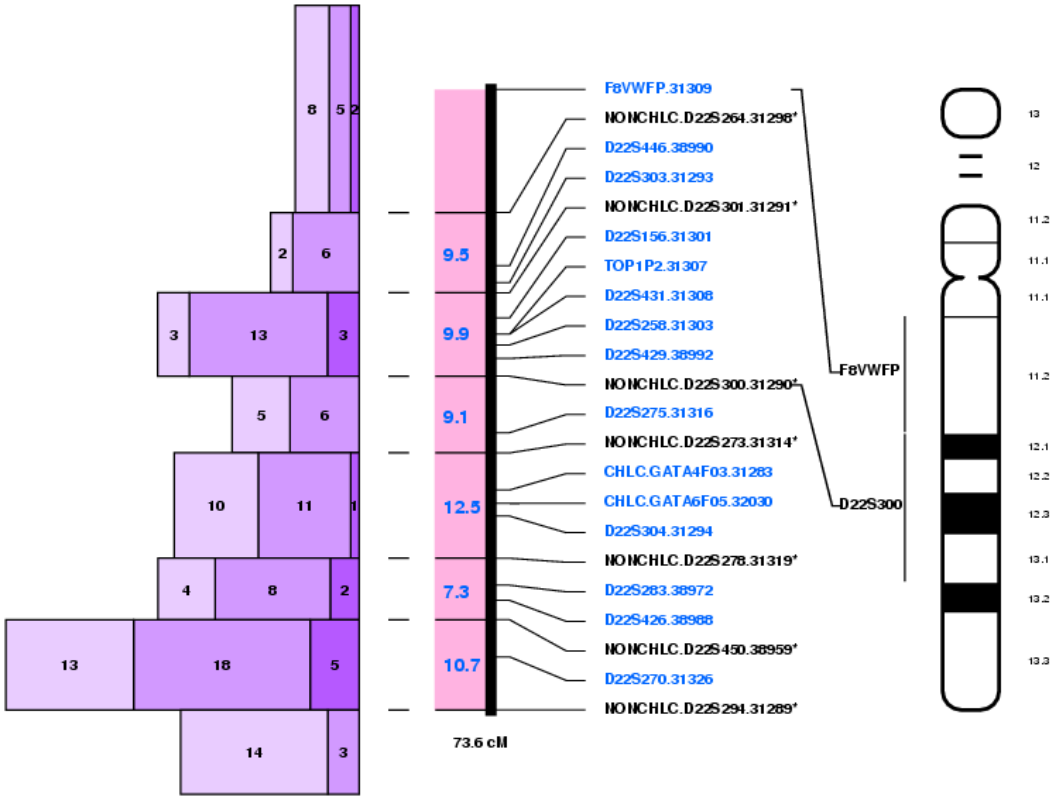
Chromosome 20
Version v8c7 Integrated Marker Map



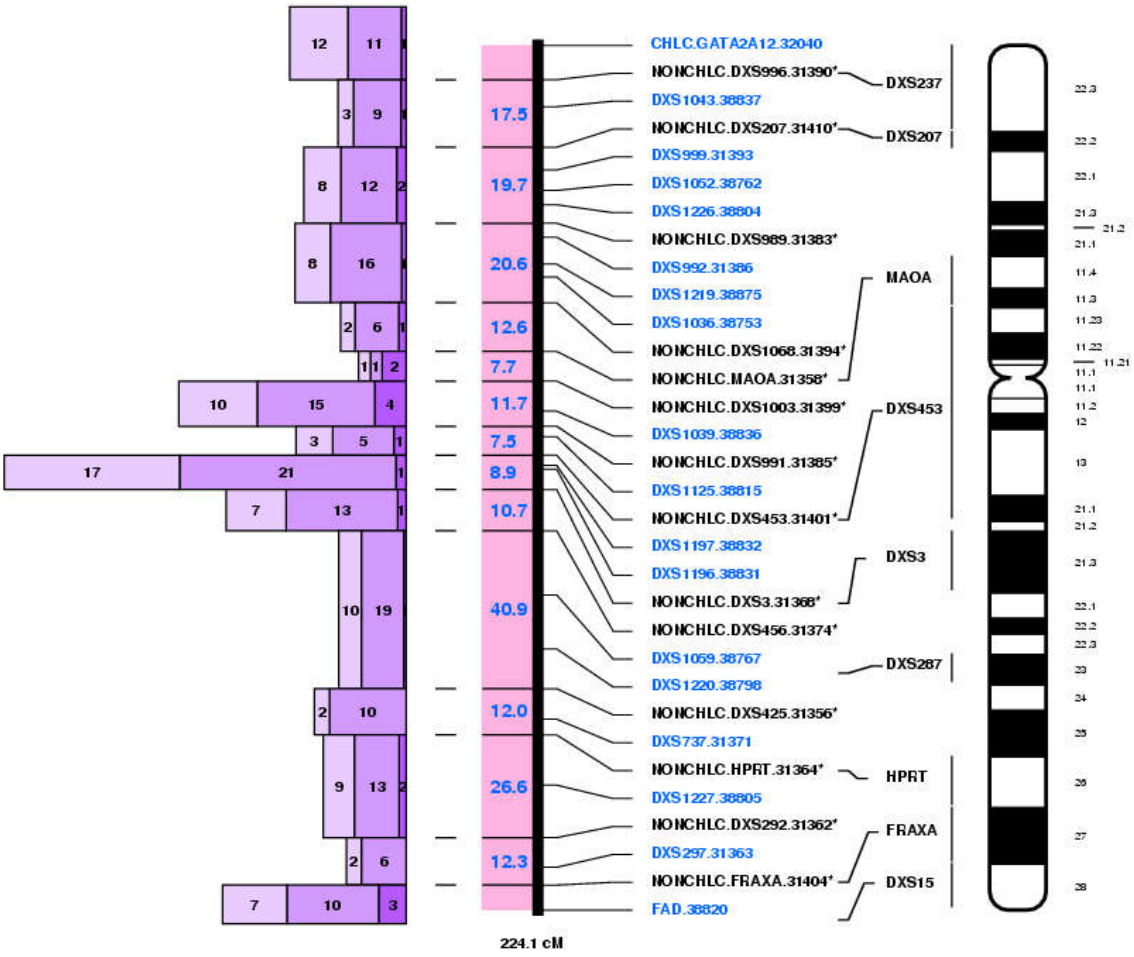
Chromosome 21
Version v8c7 Integrated Marker Map



Chromosome 22
Version v8c7 Integrated Marker Map

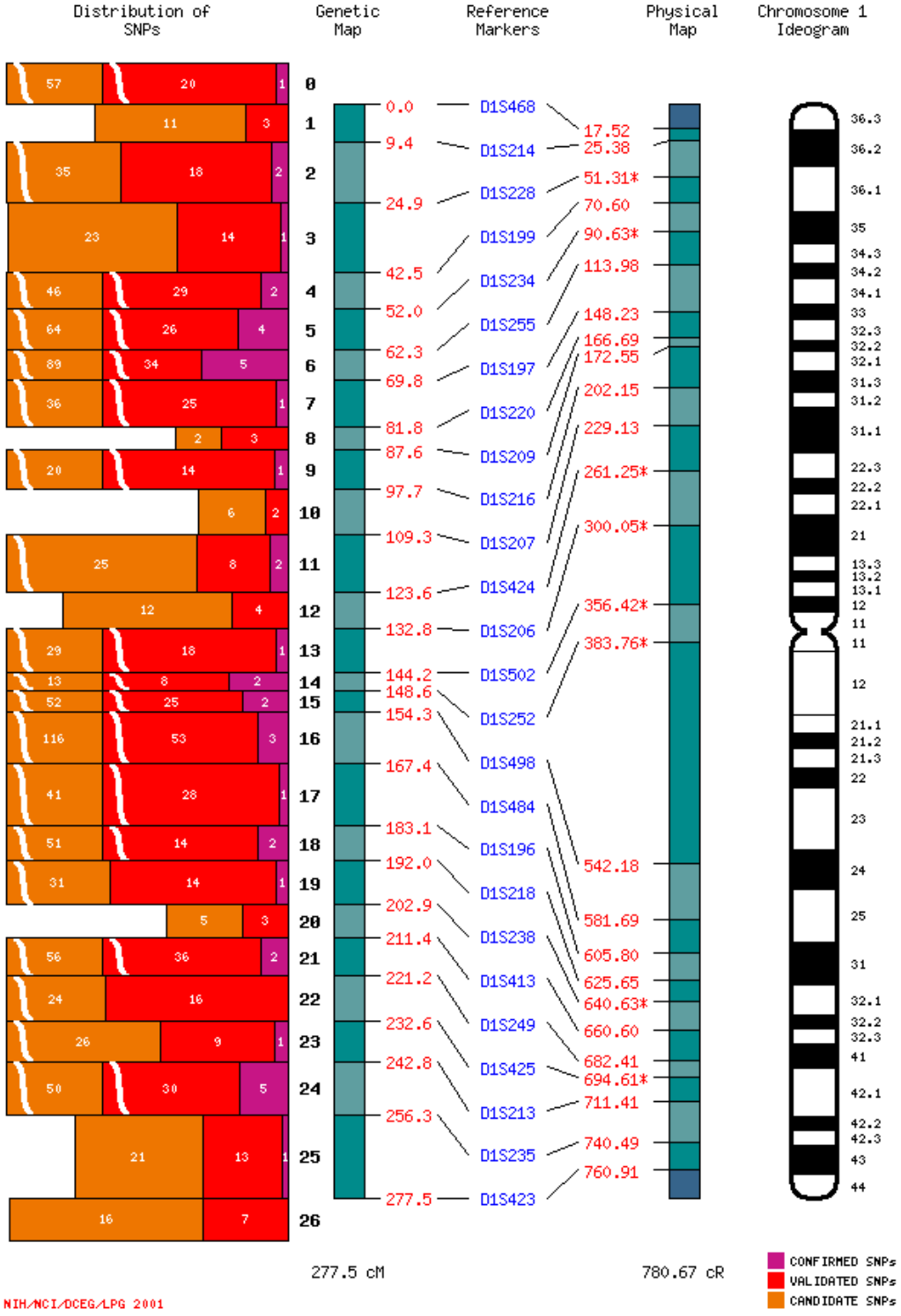


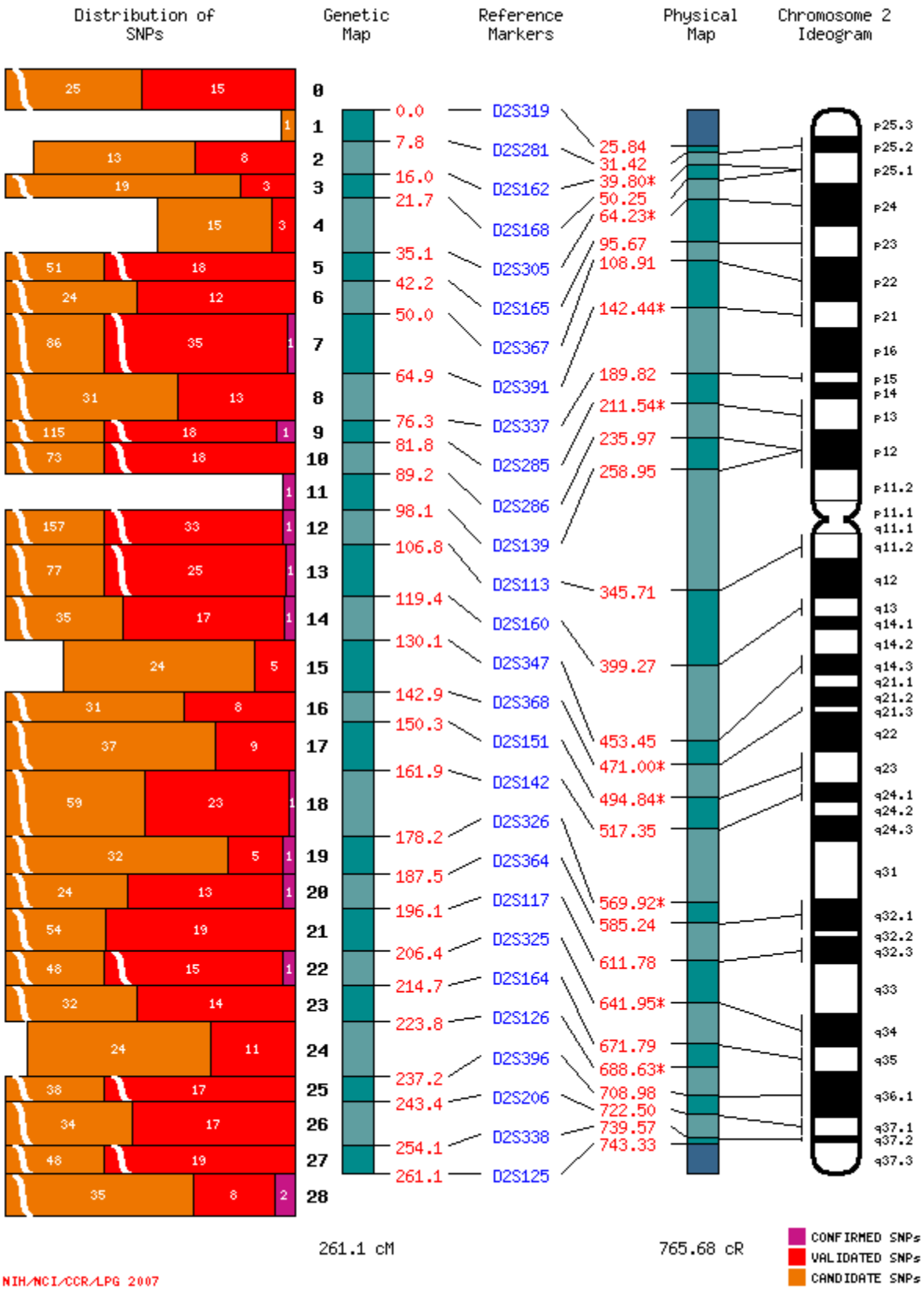
Chromosome 23
Version v8c7 Integrated Marker Map

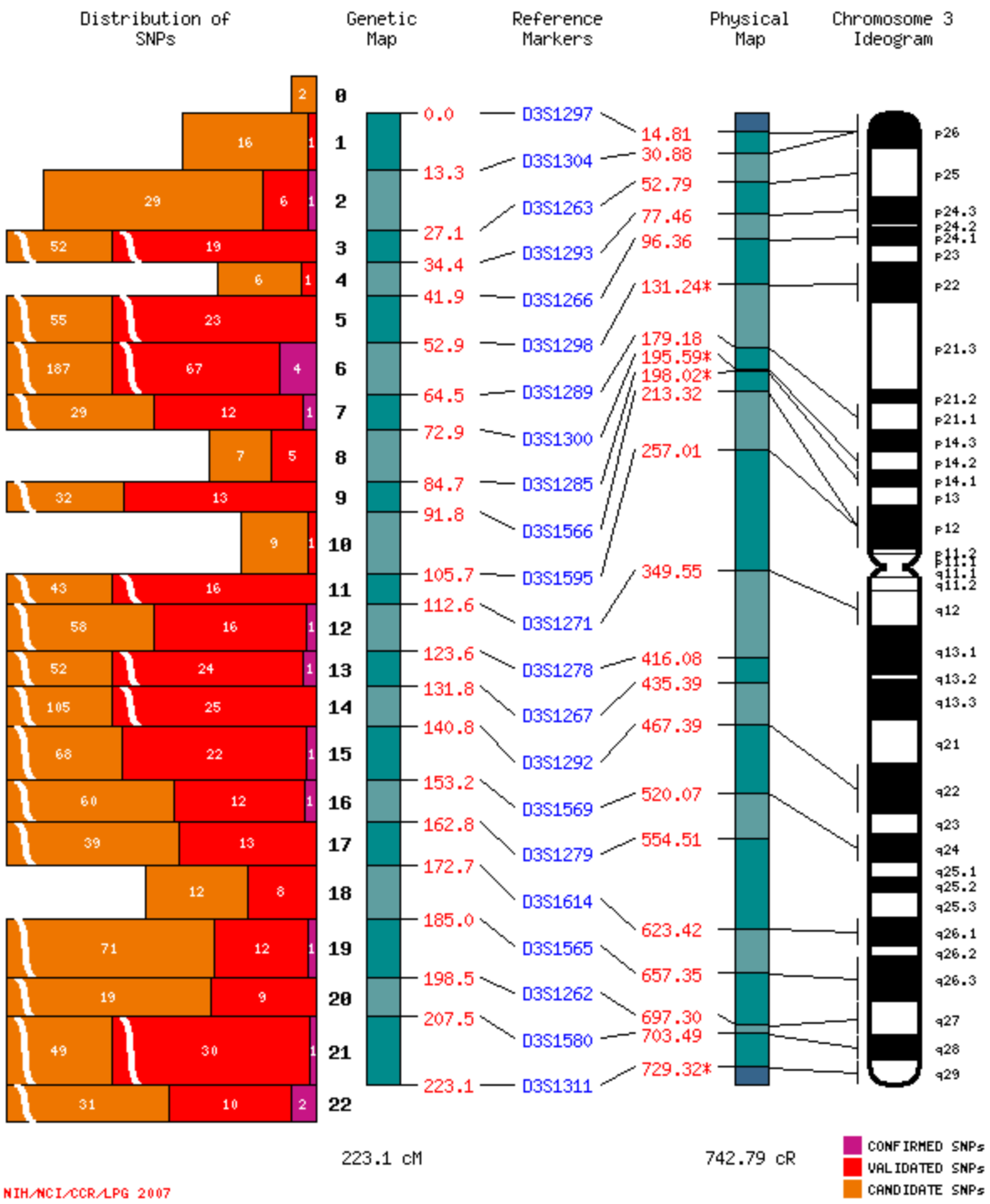


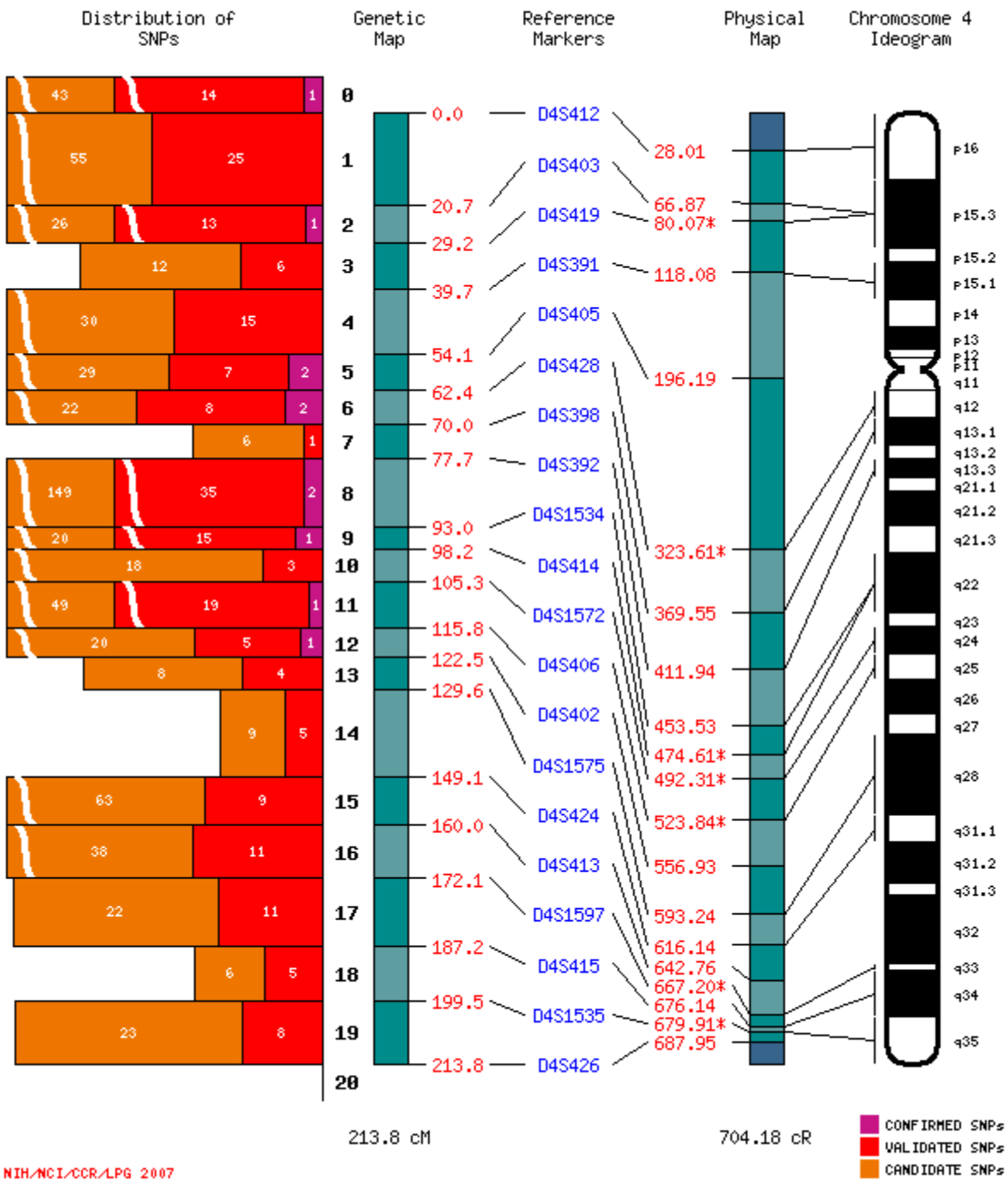
Charlie Chromosomes

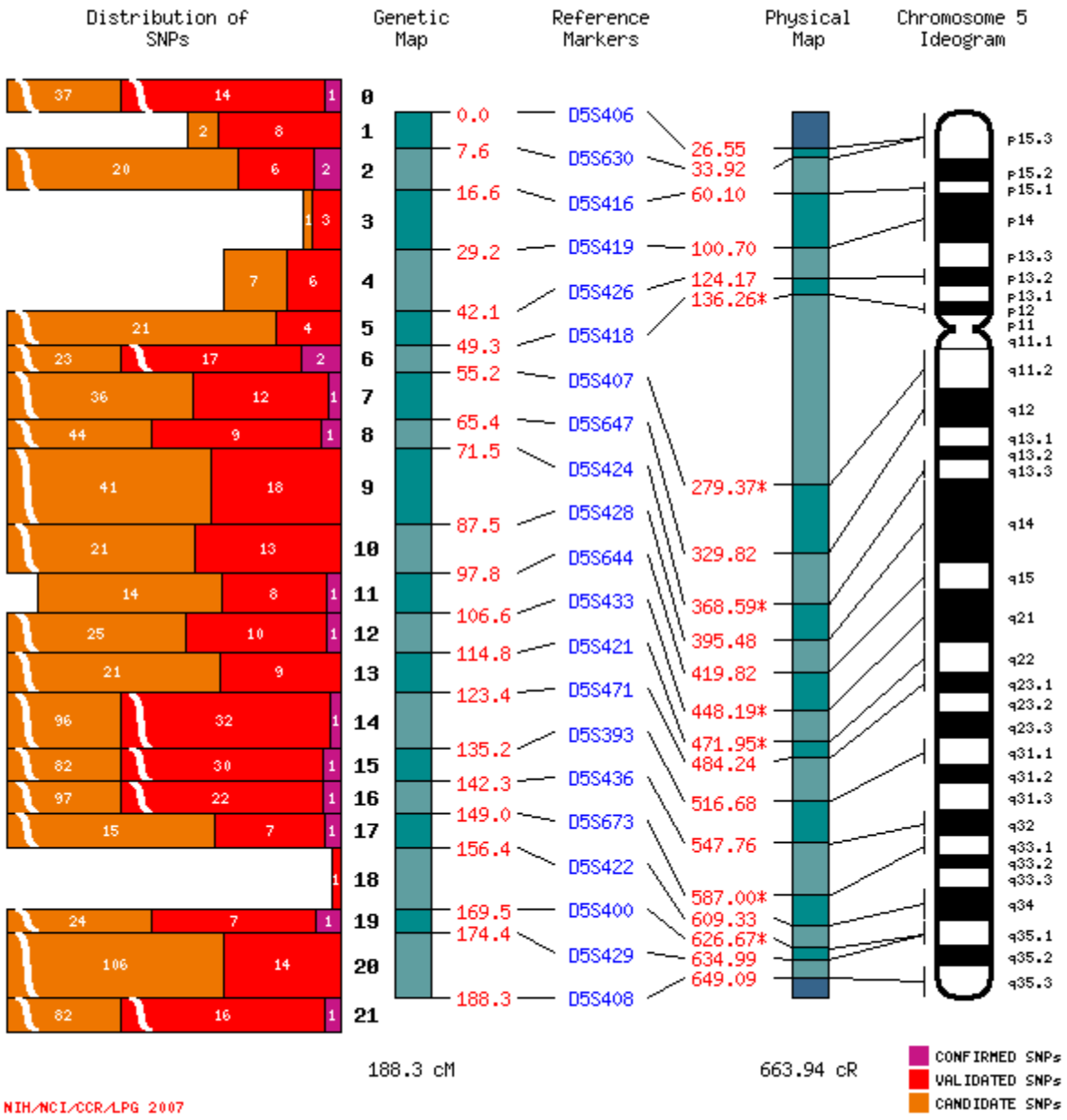
Press Here

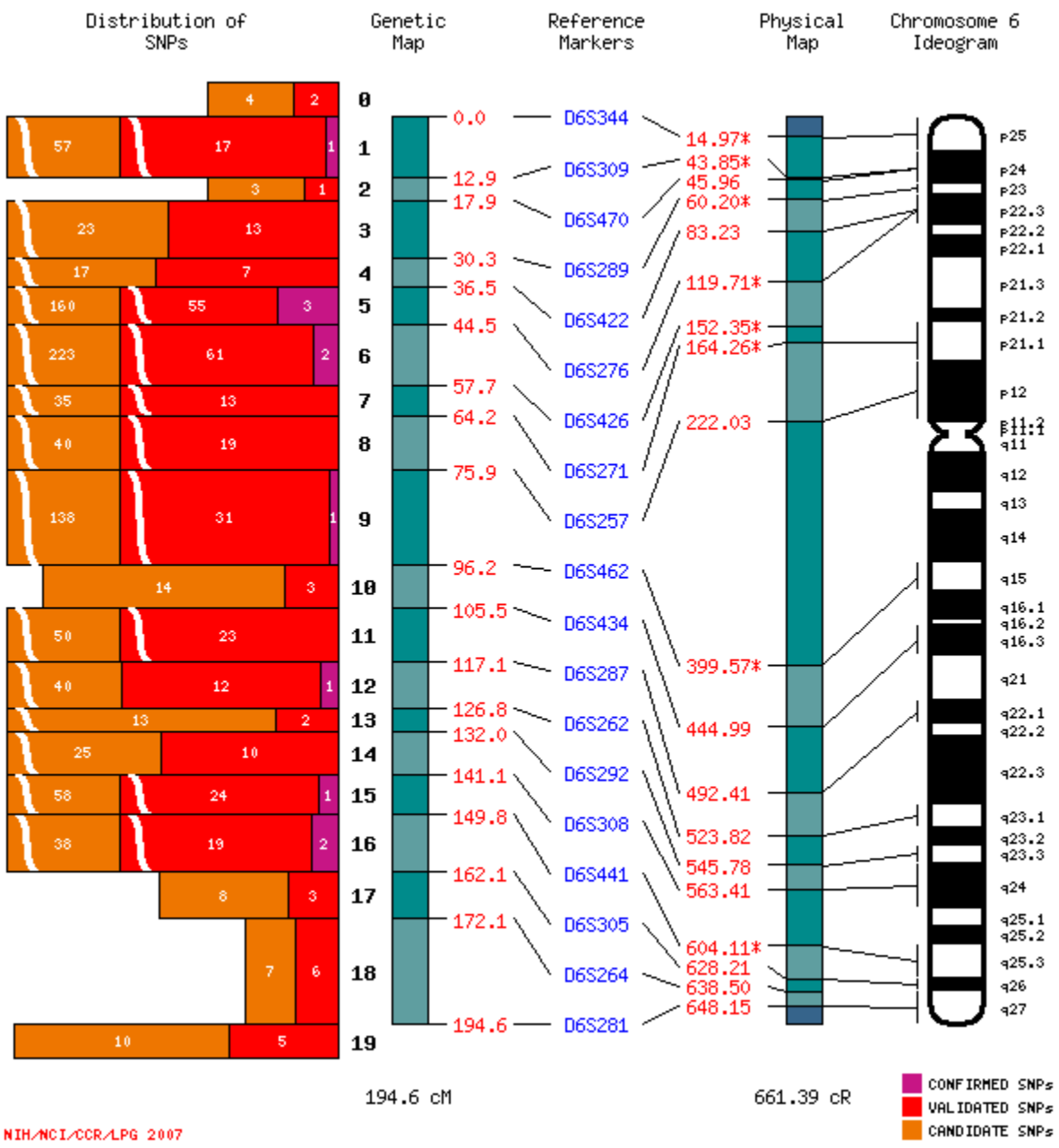


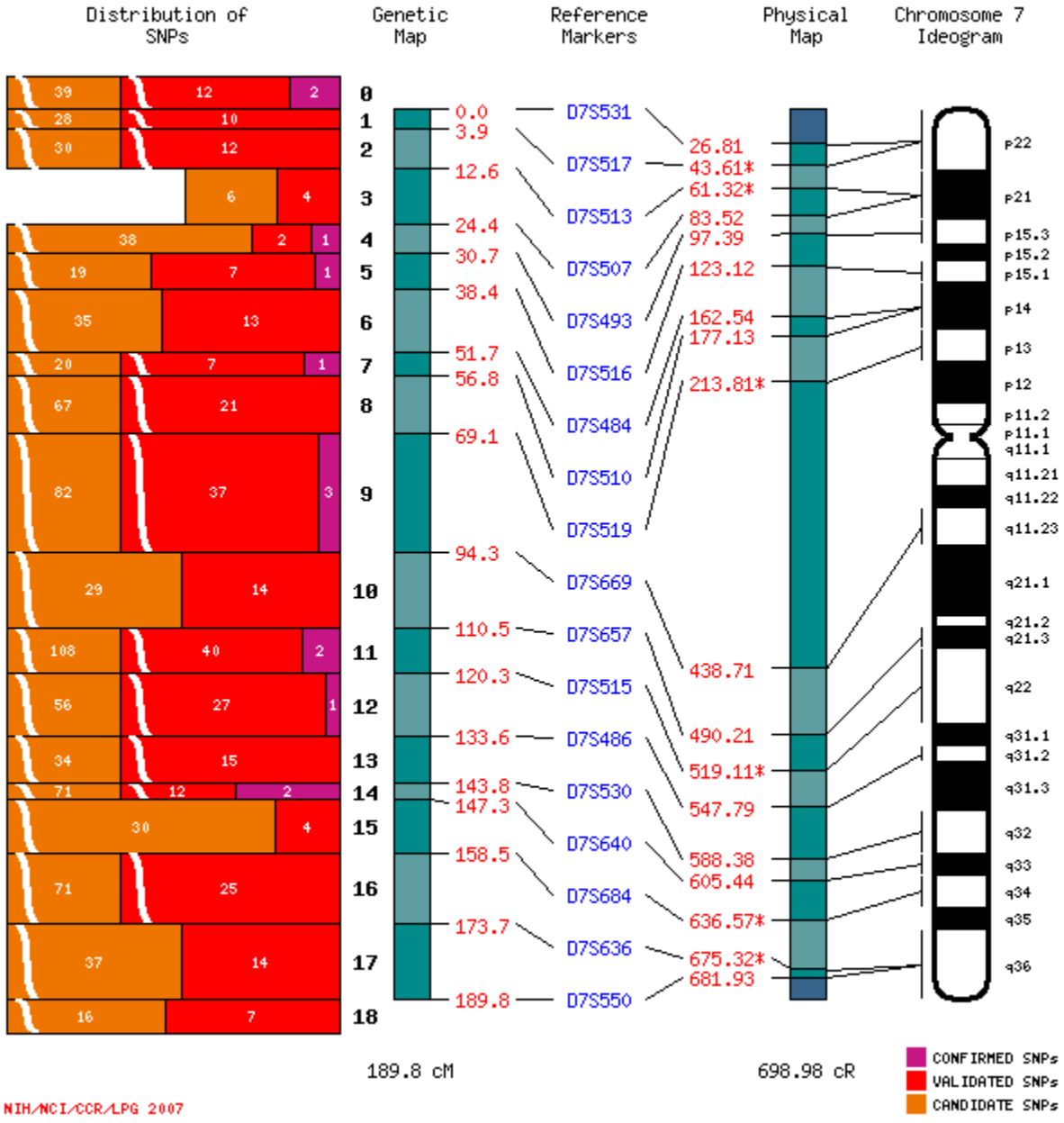

Distribution of SNPs
Genetic Map
Reference Markers
Physical Map
Chromosome 2 Ideogram
0.0 D2S319
7.8 D2S281
16.0 D2S162
21.7 D2S168
35.1 D2S305
42.2 D2S165
50.0 D2S367
64.9 D2S391
76.3 D2S337
81.8 D2S285
89.2 D2S286
98.1 D2S139
106.8 D2S113
119.4 D2S160
130.1 D2S347
142.9 D2S368
150.3 D2S151
161.9 D2S142
178.2 D2S326
187.5 D2S364
196.1 D2S117
206.4 D2S325
214.7 D2S164
223.8 D2S126
237.2 D2S396
243.4 D2S206
254.1 D2S338
261.1 D2S125
25.84
31.42
39.80*
50.25
64.23*
95.67
108.91
142.44*
189.82
211.54*
235.97
258.95
345.71
399.27
453.45
471.00*
494.84*
517.35
569.92*
585.24
611.78
641.95*
671.79
688.63*
708.98
722.50
739.57
743.33
261.1 cM
765.68 cR
CONFIRMED SNPs
VALIDATED SNPs
CANDIDATE SNPs
NIH/NCI/CCR/LPG 2007

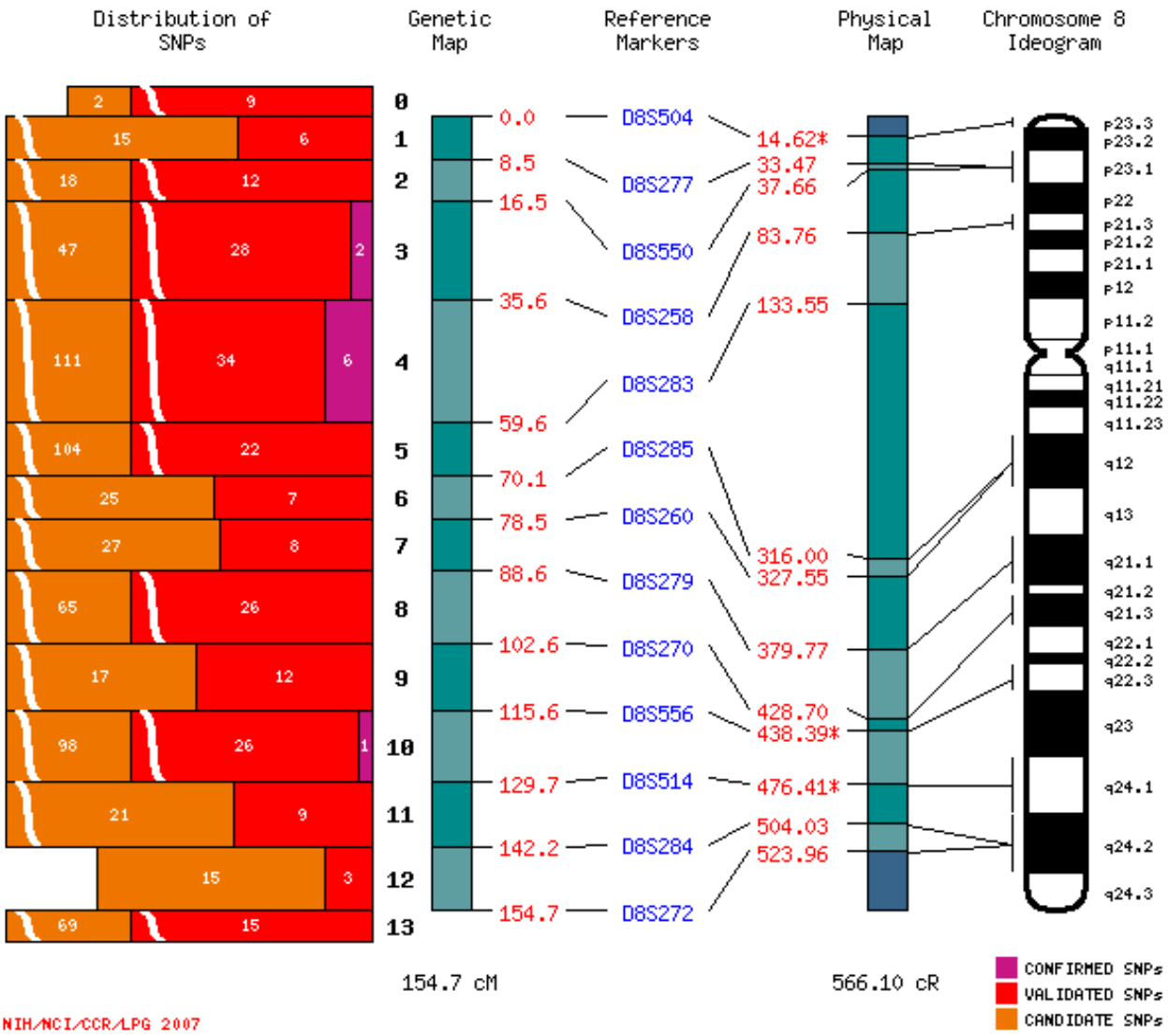

Distribution of SNPs
Genetic Map
Reference Markers
Physical Map
Chromosome 3 Ideogram
0.0 D3S1297 14.81
13.3 D3S1304 30.88
D3S1263 52.79
27.1 D3S1293 77.46
34.4 96.36
41.9 D3S1266 131.24*
52.9 D3S1298 179.18
195.59*
64.5 D3S1289 198.02*
213.32
72.9 D3S1300
84.7 D3S1285 257.01
91.8 D3S1566
105.7 D3S1595 349.55
112.6 D3S1271
123.6 D3S1278 416.08
131.8 D3S1267 435.39
140.8 D3S1292 467.39
153.2 D3S1569 520.07
162.8 D3S1279 554.51
172.7 D3S1614
185.0 D3S1565 623.42
198.5 D3S1262 657.35
207.5 D3S1580 697.30
703.49
223.1 D3S1311 729.32*
223.1 cM
742.79 cR
CONFIRMED SNPs
VALIDATED SNPs
CANDIDATE SNPs
NIH/NCI/CCR/LPG 2007

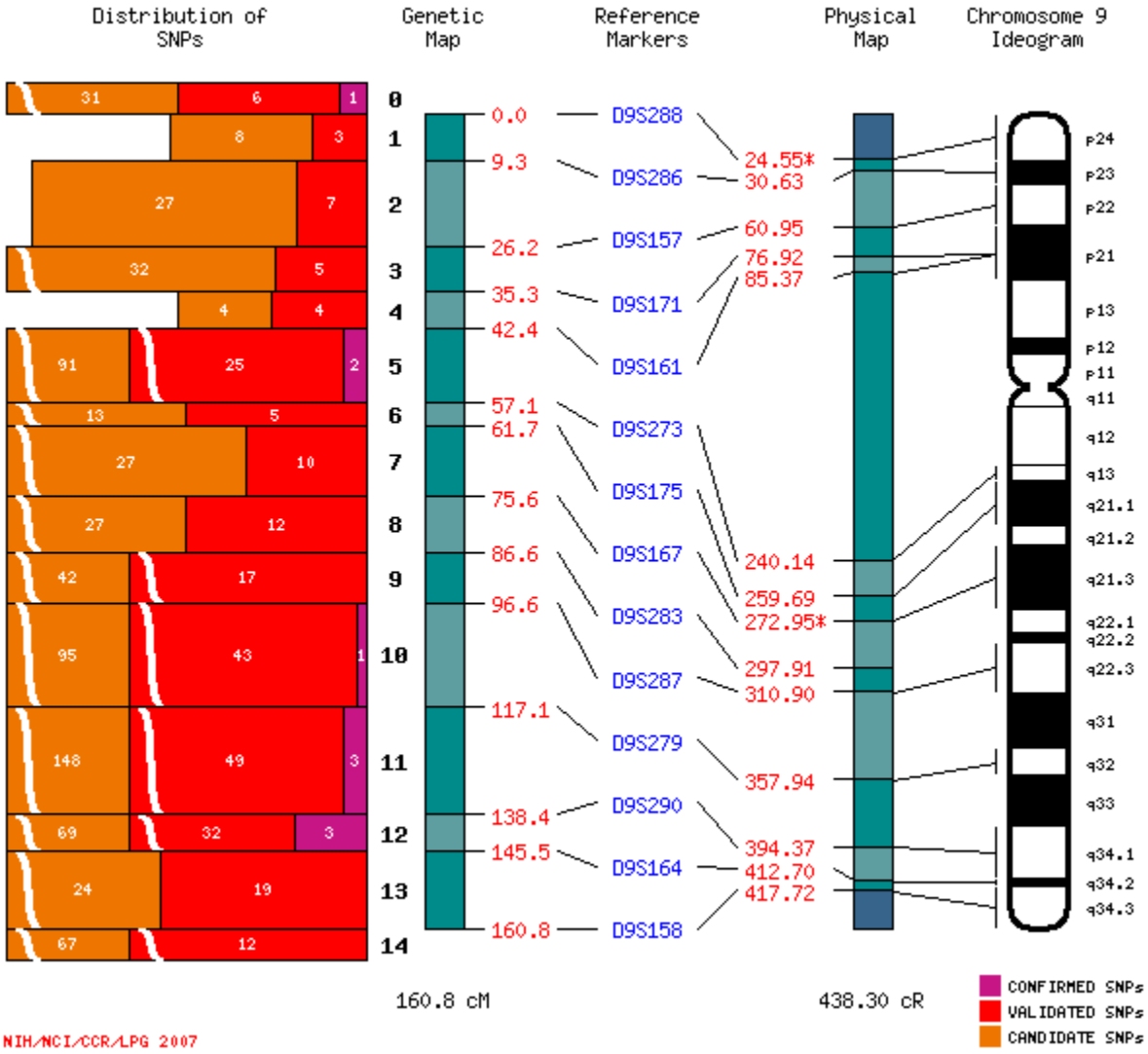

Distribution of SNPs
Genetic Map
Reference Markers
Physical Map
Chromosome 4 Ideogram
0.0
20.7
29.2
39.7
54.1
62.4
70.0
77.7
93.0
98.2
105.3
115.8
122.5
129.6
149.1
160.0
172.1
187.2
199.5
213.8
D4S412
D4S403
D4S419
D4S391
D4S405
D4S428
D4S398
D4S392
D4S1534
D4S414
D4S1572
D4S406
D4S402
D4S1575
D4S424
D4S413
D4S1597
D4S415
D4S1535
D4S426
28.01
66.87
80.07*
118.08
196.19
323.61*
369.55
411.94
453.53
474.61*
492.31*
523.84*
556.93
593.24
616.14
642.76
667.20*
676.14
679.91*
687.95
213.8 cM
704.18 cR
CONFIRMED SNPs
VALIDATED SNPs
CANDIDATE SNPs
NIH/NCI/CCR/LPG 2007

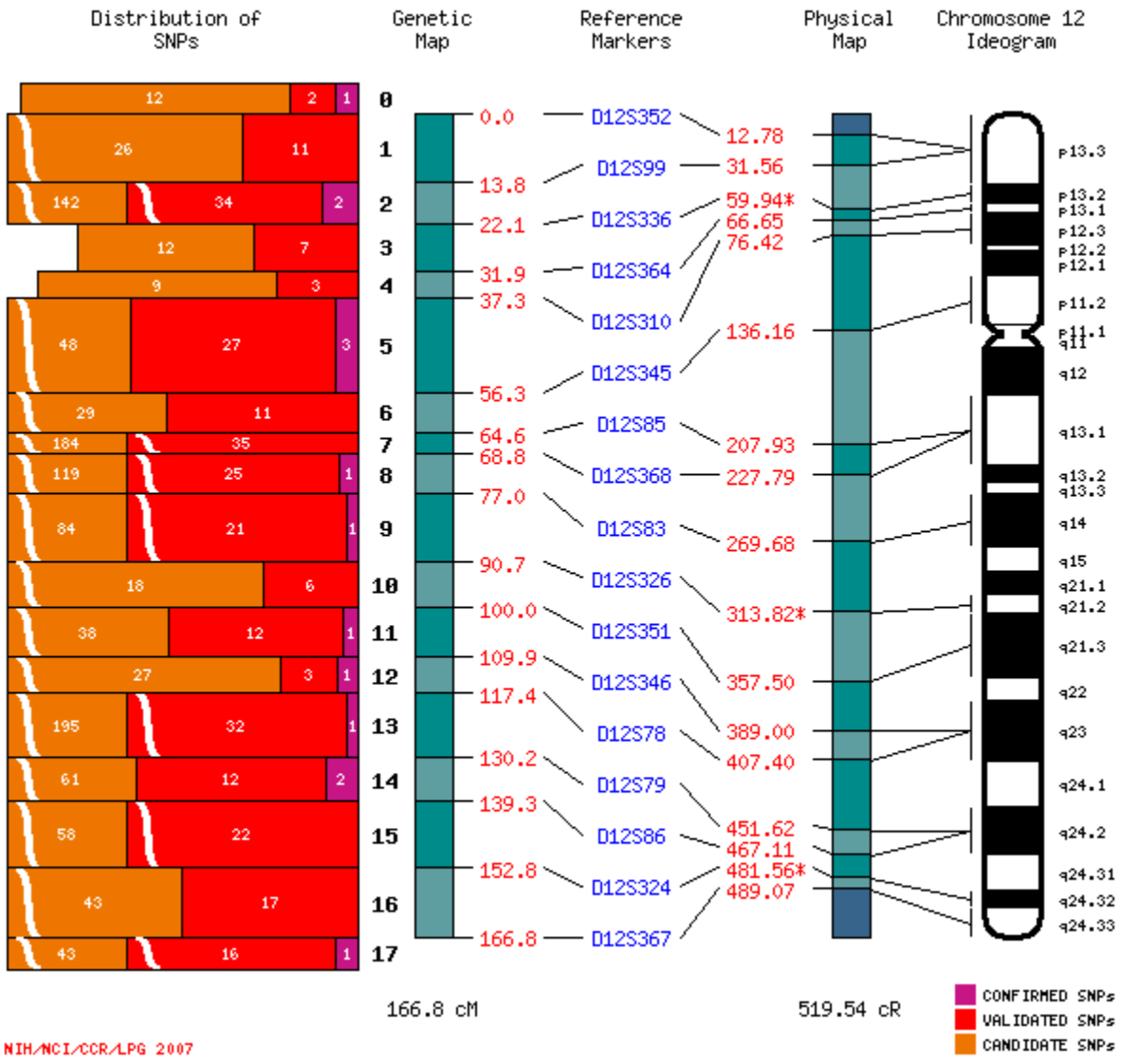

Distribution of SNPs
Genetic Map
Reference Markers
Physical Map
Chromosome 5 Ideogram
0.0 D5S406
7.6 D5S630
16.6 D5S416
29.2 D5S419
42.1 D5S426
49.3 D5S418
55.2 D5S407
65.4 D5S647
71.5 D5S424
87.5 D5S428
97.8 D5S644
106.6 D5S433
114.8 D5S421
123.4 D5S471
135.2 D5S393
142.3 D5S436
149.0 D5S673
156.4 D5S422
169.5 D5S400
174.4 D5S429
188.3 D5S408
26.55
33.92
60.10
100.70
124.17
136.26*
279.37*
329.82
368.59*
395.48
419.82
448.19*
471.95*
484.24
516.68
547.76
587.00*
609.33
626.67*
634.99
649.09
188.3 cM
663.94 cR
CONFIRMED SNPs
VALIDATED SNPs
CANDIDATE SNPs
NIH/NCI/CCR/LPG 2007

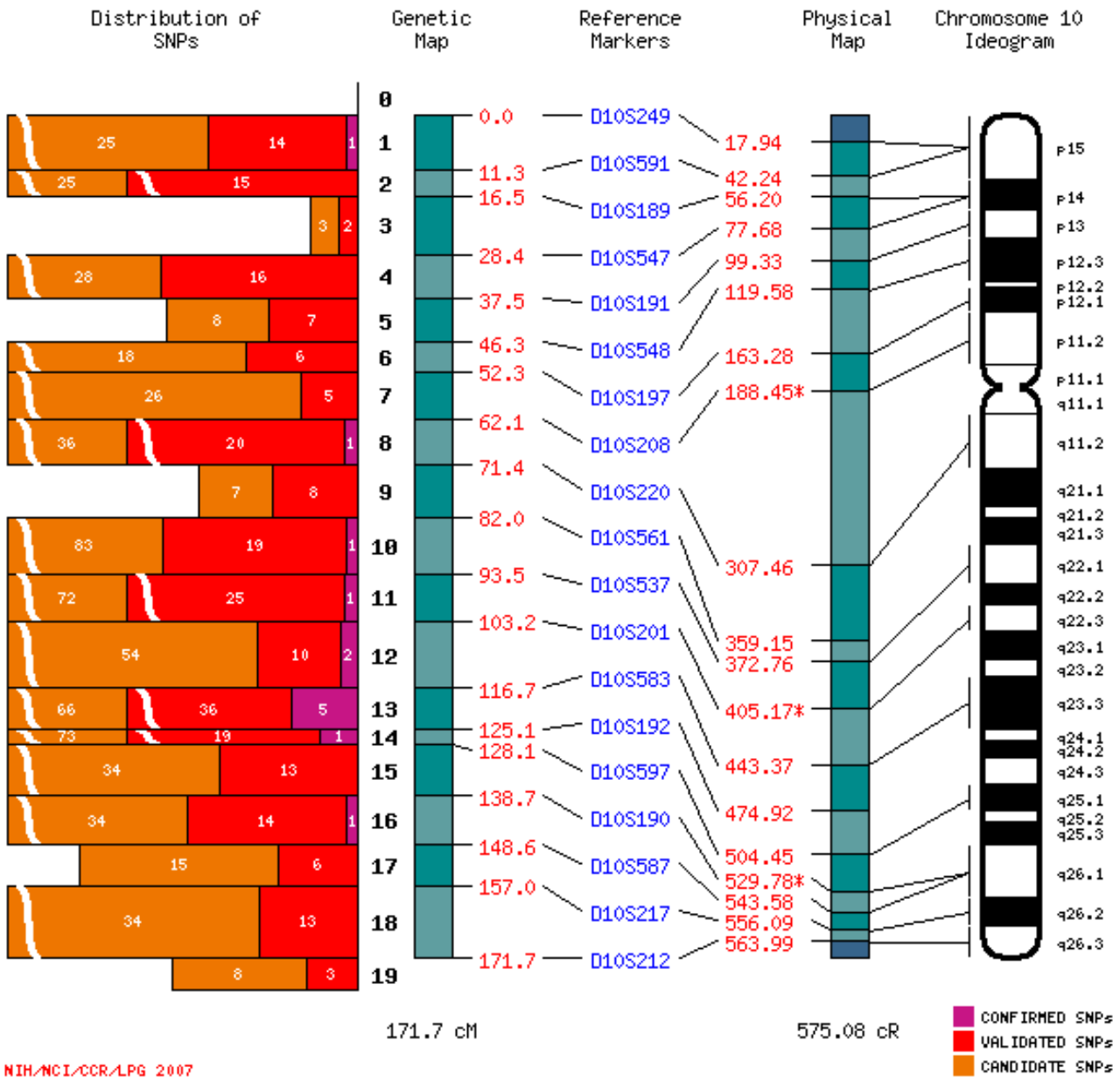

Distribution of SNPs
Genetic Map
Reference Markers
Physical Map
Chromosome 6 Ideogram
0.0 D6S344
12.9 D6S309
17.9 D6S470
30.3 D6S289
36.5
44.5 D6S422
57.7 D6S276
64.2 D6S426
75.9 D6S271
D6S257
96.2 D6S462
105.5 D6S434
117.1 D6S287
126.8 D6S262
132.0
141.1 D6S292
149.8 D6S308
162.1 D6S441
172.1 D6S305
D6S264
194.6 D6S281
14.97*
43.85*
45.96
60.20*
83.23
119.71*
152.35*
164.26*
222.03
399.57*
444.99
492.41
523.82
545.78
563.41
604.11*
628.21
638.50
648.15
194.6 cM
661.39 cR
CONFIRMED SNPs
VALIDATED SNPs
CANDIDATE SNPs
NIH/NCI/CCR/LPG 2007

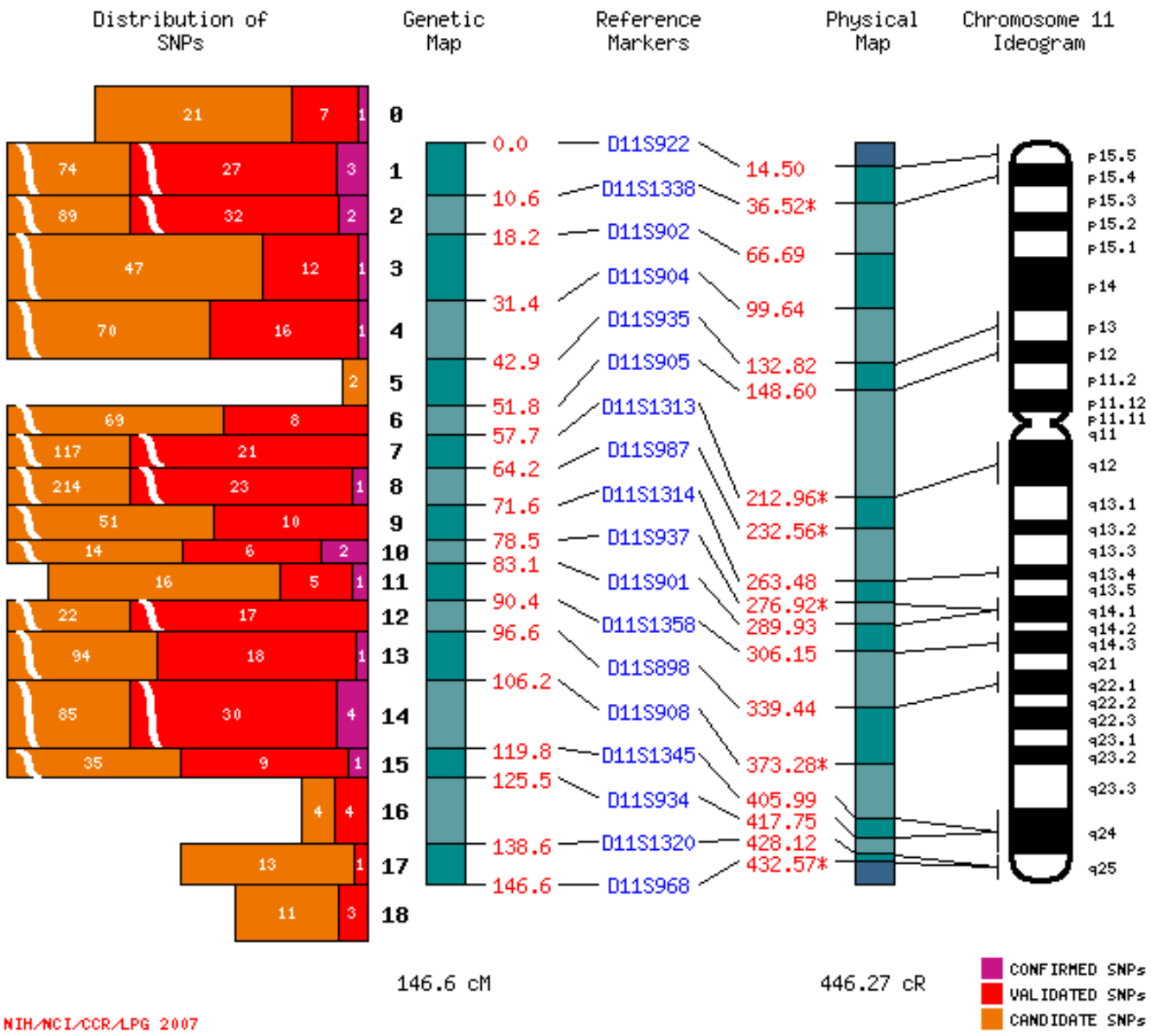

Distribution of SNPs
Genetic Map
Reference Markers
Physical Map
Chromosome 7 Ideogram
0.0
3.9
12.6
24.4
30.7
38.4
51.7
56.8
69.1
94.3
110.5
120.3
133.6
143.8
147.3
158.5
173.7
189.8
D7S531
D7S517
D7S513
D7S507
D7S493
D7S516
D7S484
D7S510
D7S519
D7S669
D7S657
D7S515
D7S486
D7S530
D7S640
D7S684
D7S636
D7S550
26.81
43.61*
61.32*
83.52
97.39
123.12
162.54
177.13
213.81*
438.71
490.21
519.11*
547.79
588.38
605.44
636.57*
675.32*
681.93
189.8 cM
698.98 cR
CONFIRMED SNPs
VALIDATED SNPs
CANDIDATE SNPs
NIH/NCI/CCR/LPG 2007

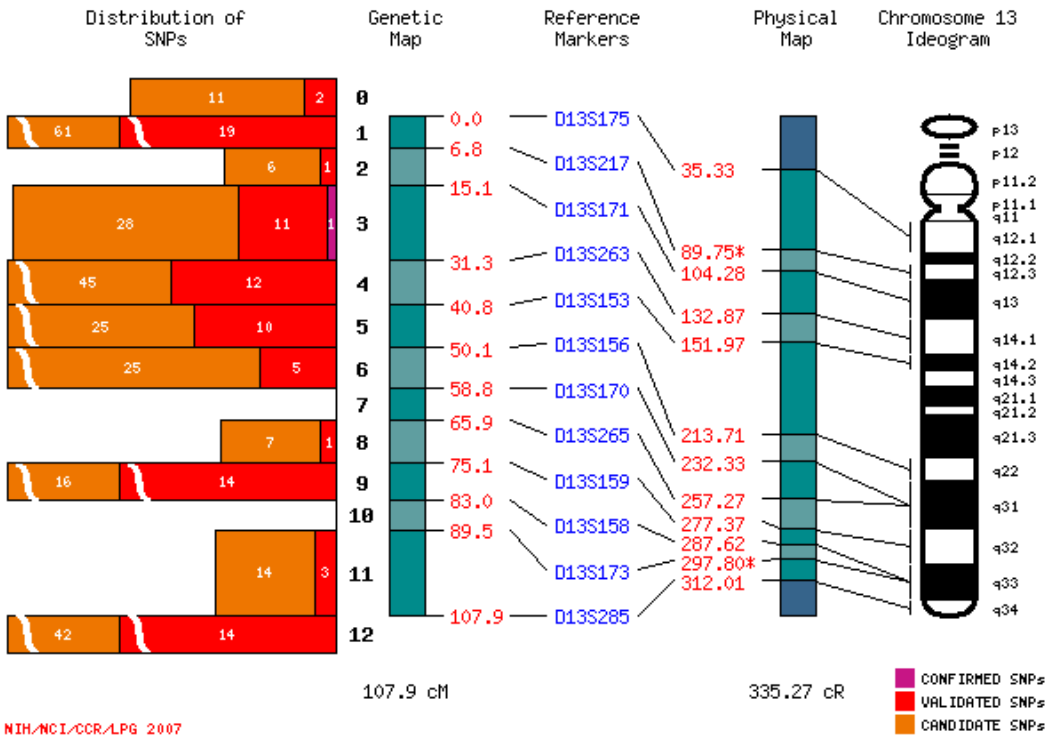

Distribution of SNPs
Genetic Map
Reference Markers
Physical Map
Chromosome 8 Ideogram
0.0
8.5
16.5
35.6
59.6
70.1
78.5
88.6
102.6
115.6
129.7
142.2
154.7
D8S504
D8S277
D8S550
D8S258
D8S283
D8S285
D8S260
D8S279
D8S270
D8S556
D8S514
D8S284
D8S272
14.62*
33.47
37.66
83.76
133.55
316.00
327.55
379.77
428.70
438.39*
476.41*
504.03
523.96
154.7 cM
566.10 cR
CONFIRMED SNPs
VALIDATED SNPs
CANDIDATE SNPs
NIH/NCI/CCR/LPG 2007

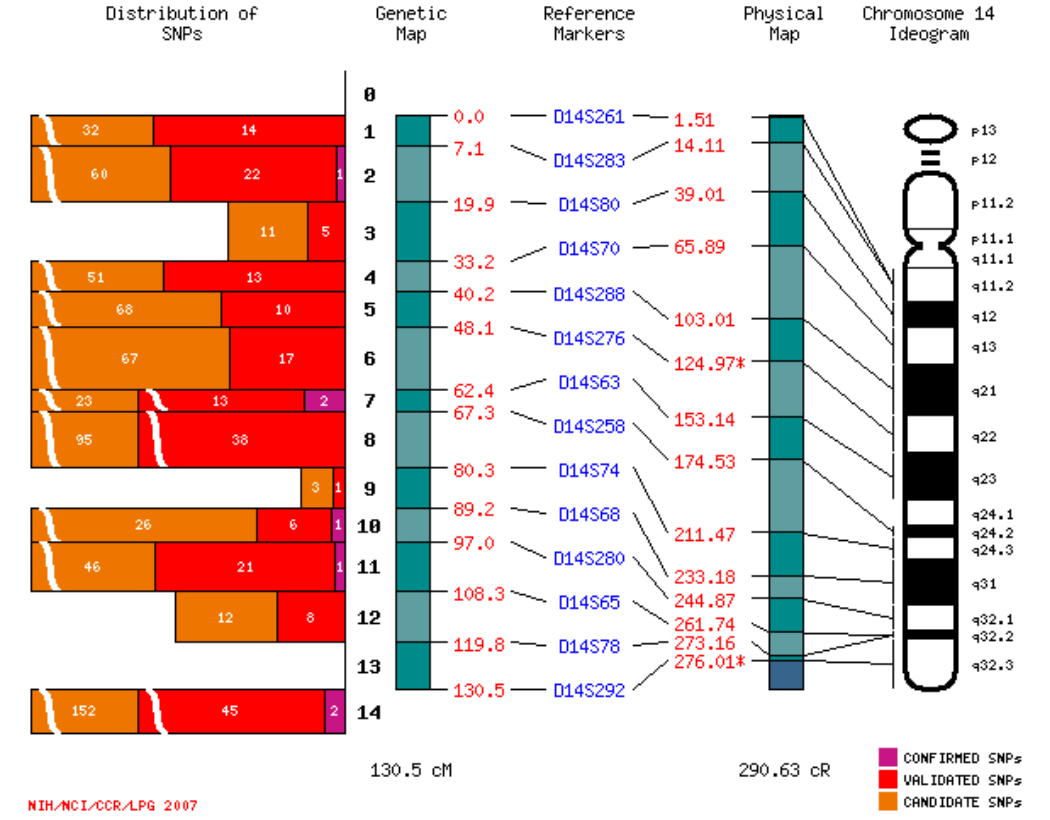

Distribution of SNPs
Genetic Map
Reference Markers
Physical Map
Chromosome 9 Ideogram
31
6
1
8
3
27
7
32
5
4
4
91
25
2
13
5
27
10
27
12
42
17
95
43
1
148
49
3
69
32
3
24
19
67
12
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
0.0
9.3
26.2
35.3
42.4
57.1
61.7
75.6
86.6
96.6
117.1
138.4
145.5
160.8
D9S288
D9S286
D9S157
D9S171
D9S161
D9S273
D9S175
D9S167
D9S283
D9S287
D9S279
D9S290
D9S164
D9S158
24.55*
30.63
60.95
76.92
85.37
240.14
259.69
272.95*
297.91
310.90
357.94
394.37
412.70
417.72
p24
p23
p22
p21
p13
p12
p11
q11
q12
q13
q21.1
q21.2
q21.3
q22.1
q22.2
q22.3
q31
q32
q33
q34.1
q34.2
q34.3
160.8 cM
438.30 cR
CONFIRMED SNPs
VALIDATED SNPs
CANDIDATE SNPs
NIH/NCI/CCR/LPG 2007

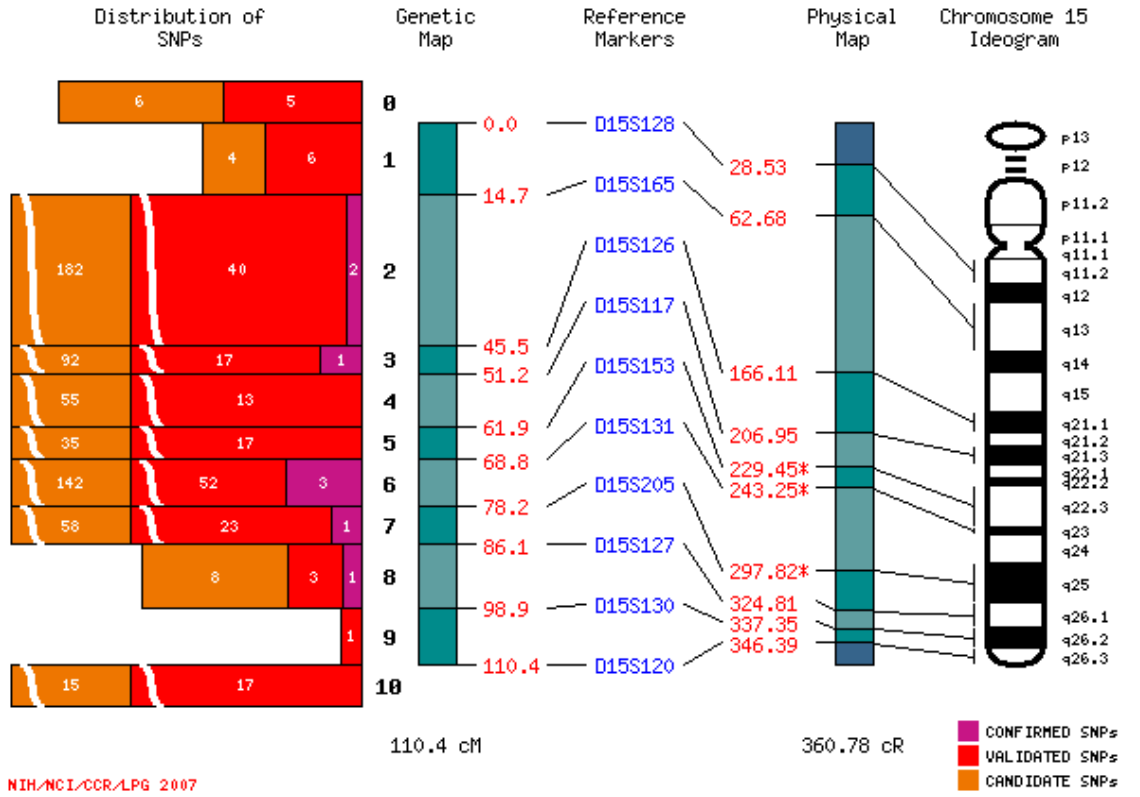

Distribution of SNPs
Genetic Map
Reference Markers
Physical Map
Chromosome 12 Ideogram
0.0
13.8
22.1
31.9
37.3
56.3
64.6
68.8
77.0
90.7
100.0
109.9
117.4
130.2
139.3
152.8
166.8
D12S352
D12S99
D12S336
D12S364
D12S310
D12S345
D12S85
D12S368
D12S83
D12S326
D12S351
D12S346
D12S78
D12S79
D12S86
D12S324
D12S367
12.78
31.56
59.94*
66.65
76.42
136.16
207.93
227.79
269.68
313.82*
357.50
389.00
407.40
451.62
467.11
481.56*
489.07
p13.3
p13.2
p13.1
p12.3
p12.2
p12.1
p11.2
p11.1
q11
q12
q13.1
q13.2
q13.3
q14
q15
q21.1
q21.2
q21.3
q22
q23
q24.1
q24.2
q24.31
q24.32
q24.33
166.8 cM
519.54 cR
CONFIRMED SNPs
VALIDATED SNPs
CANDIDATE SNPs
NIH/NCI/CCR/LPG 2007

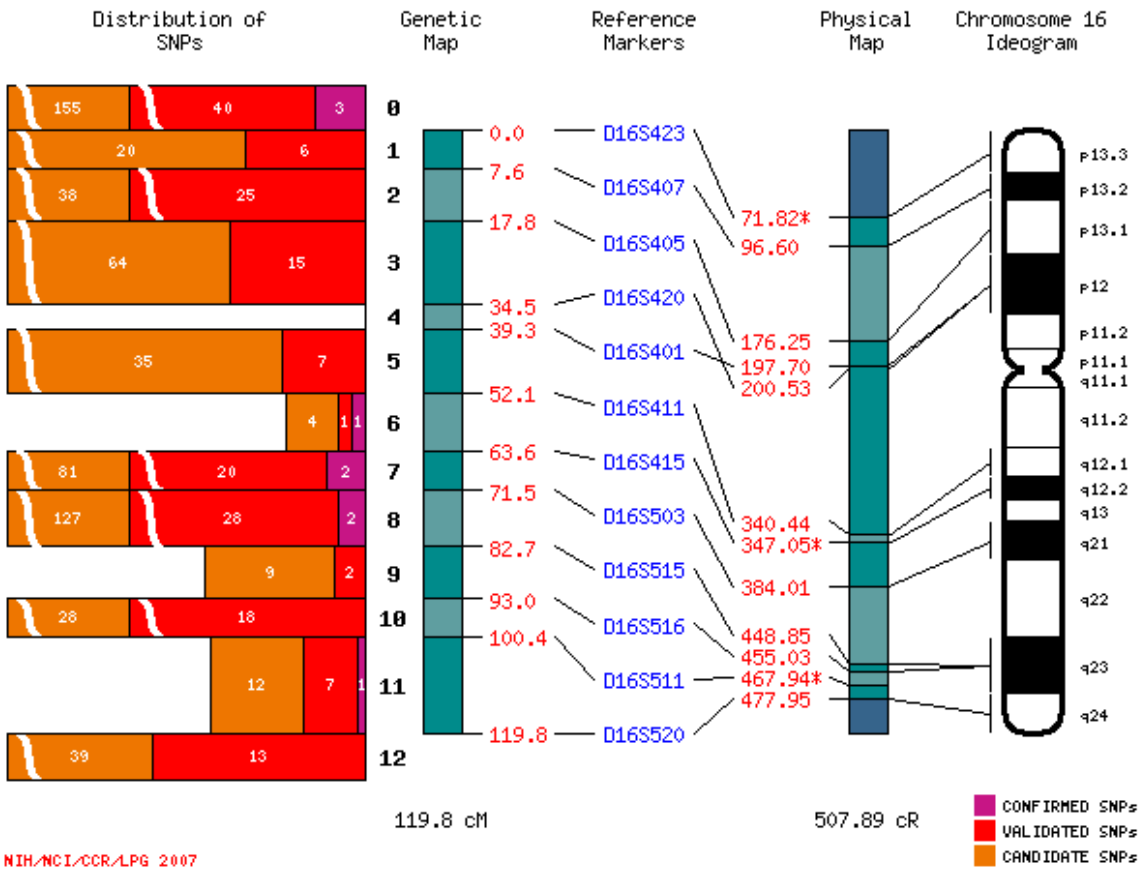

Distribution of SNPs
Genetic Map
Reference Markers
Physical Map
Chromosome 10 Ideogram
0.0
11.3
16.5
28.4
37.5
46.3
52.3
62.1
71.4
82.0
93.5
103.2
116.7
125.1
128.1
138.7
148.6
157.0
171.7
D10S249
D10S591
D10S189
D10S547
D10S191
D10S548
D10S197
D10S208
D10S220
D10S561
D10S537
D10S201
D10S583
D10S192
D10S597
D10S190
D10S587
D10S217
D10S212
17.94
42.24
56.20
77.68
99.33
119.58
163.28
188.45*
307.46
359.15
372.76
405.17*
443.37
474.92
504.45
529.78*
543.58
556.09
563.99
p15
p14
p13
p12.3
p12.2
p12.1
p11.2
p11.1
q11.1
q11.2
q21.1
q21.2
q21.3
q22.1
q22.2
q22.3
q23.1
q23.2
q23.3
q24.1
q24.2
q24.3
q25.1
q25.2
q25.3
q26.1
q26.2
q26.3
171.7 cM
575.08 cR
CONFIRMED SNPs
VALIDATED SNPs
CANDIDATE SNPs
NIH/NCI/CCR/LPG 2007

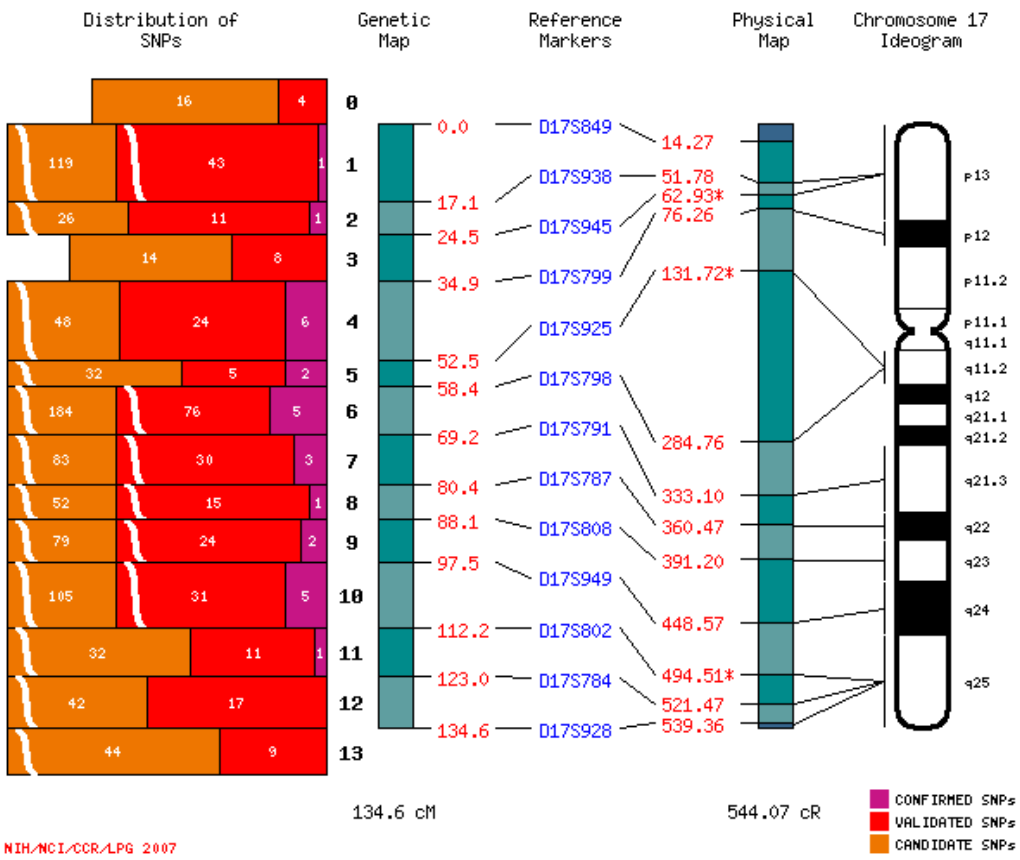

Distribution of SNPs
Genetic Map
Reference Markers
Physical Map
Chromosome 11 Ideogram
0.0
10.6
18.2
31.4
42.9
51.8
57.7
64.2
71.6
78.5
83.1
90.4
96.6
106.2
119.8
125.5
138.6
146.6
D11S922
D11S1338
D11S902
D11S904
D11S935
D11S905
D11S1313
D11S987
D11S1314
D11S937
D11S901
D11S1358
D11S898
D11S908
D11S1345
D11S934
D11S1320
D11S968
14.50
36.52*
66.69
99.64
132.82
148.60
212.96*
232.56*
263.48
276.92*
289.93
306.15
339.44
373.28*
405.99
417.75
428.12
432.57*
p15.5
p15.4
p15.3
p15.2
p15.1
p14
p13
p12
p11.2
p11.12
p11.11
q11
q12
q13.1
q13.2
q13.3
q13.4
q13.5
q14.1
q14.2
q14.3
q21
q22.1
q22.2
q22.3
q23.1
q23.2
q23.3
q24
q25
146.6 cM
446.27 cR
CONFIRMED SNPs
VALIDATED SNPs
CANDIDATE SNPs
NIH/NCI/CCR/LPG 2007

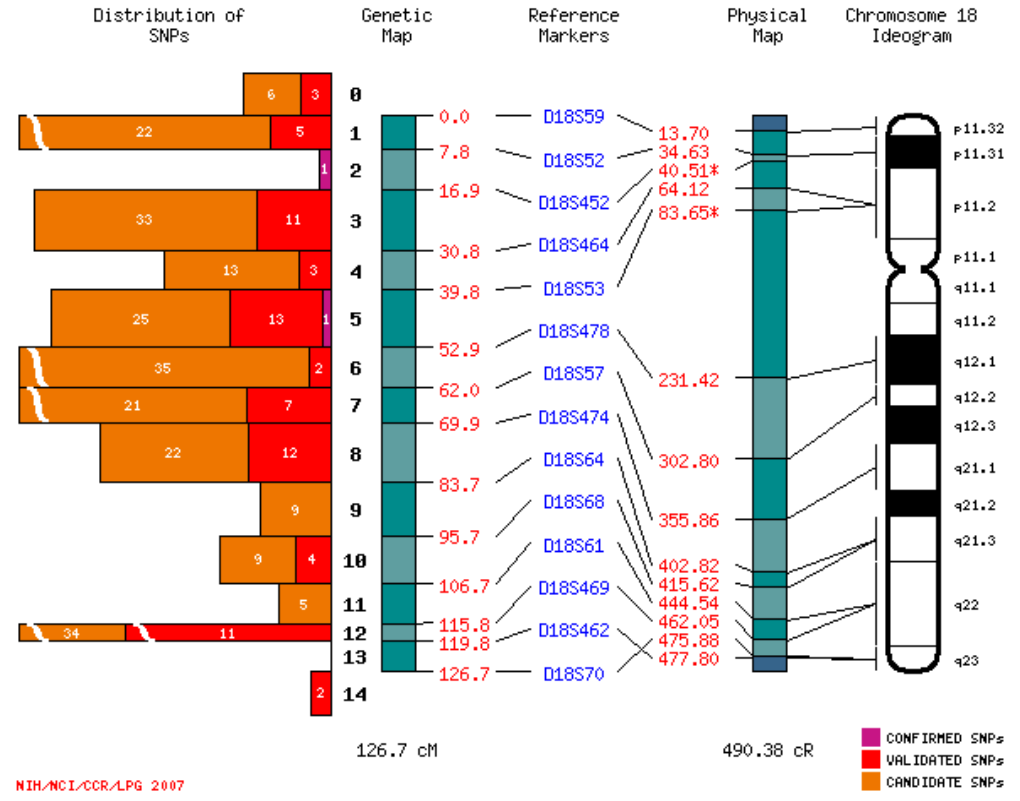

Distribution of SNPs
Genetic Map
Reference Markers
Physical Map
Chromosome 13 Ideogram
0.0 D13S175 35.33
6.8 D13S217
15.1 D13S171 89.75*
31.3 D13S263 104.28
40.8 D13S153 132.87
50.1 D13S156 151.97
58.8 D13S170 213.71
65.9 D13S265 232.33
75.1 D13S159 257.27
83.0 D13S158 277.37
89.5 D13S173 287.62 297.80* 312.01
107.9 D13S285
107.9 cM
335.27 cR
CONFIRMED SNPs
VALIDATED SNPs
CANDIDATE SNPs
NIH/NCI/CCR/LPG 2007

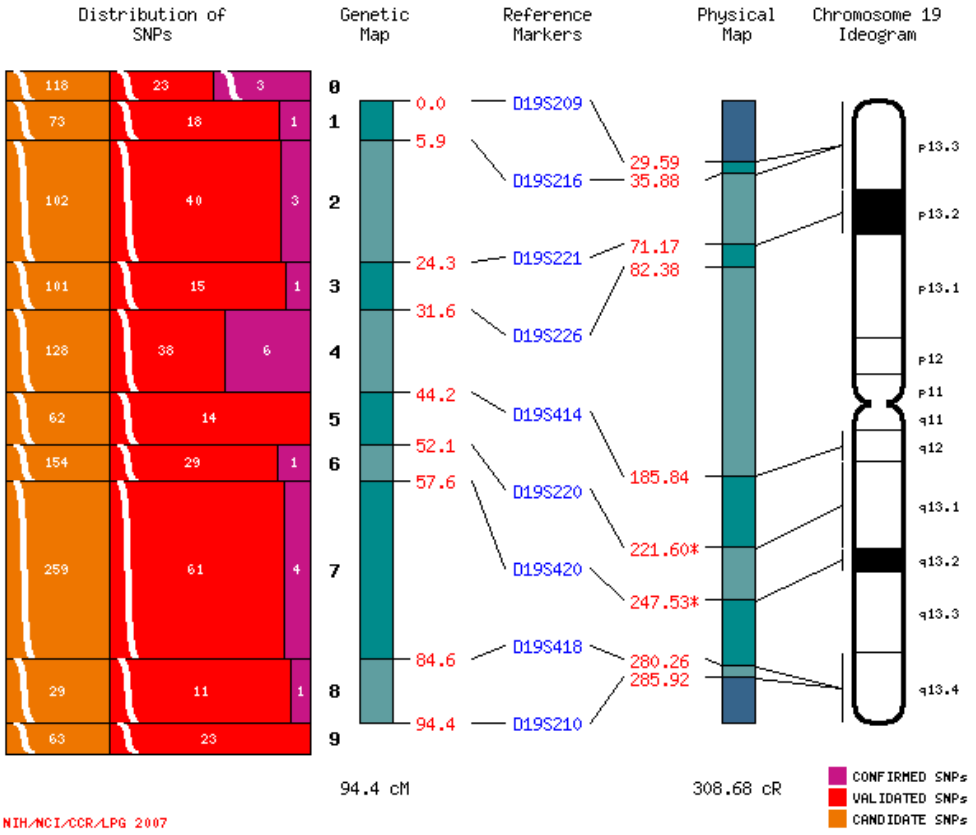

Distribution of SNPs
Genetic Map
Reference Markers
Physical Map
Chromosome 14 Ideogram
0.0 D14S261 1.51
7.1 D14S283 14.11
19.9 D14S80 39.01
33.2 D14S70 65.89
40.2 D14S288 103.01
48.1 D14S276 124.97*
62.4 D14S63 153.14
67.3 D14S258 174.53
80.3 D14S74 211.47
89.2 D14S68 233.18 244.87 261.74
97.0 D14S280 273.16
108.3 D14S65 276.01*
119.8 D14S78
130.5 D14S292
130.5 cM
290.63 cR
CONFIRMED SNPs
VALIDATED SNPs
CANDIDATE SNPs
NIH/NCI/CCR/LPG 2007

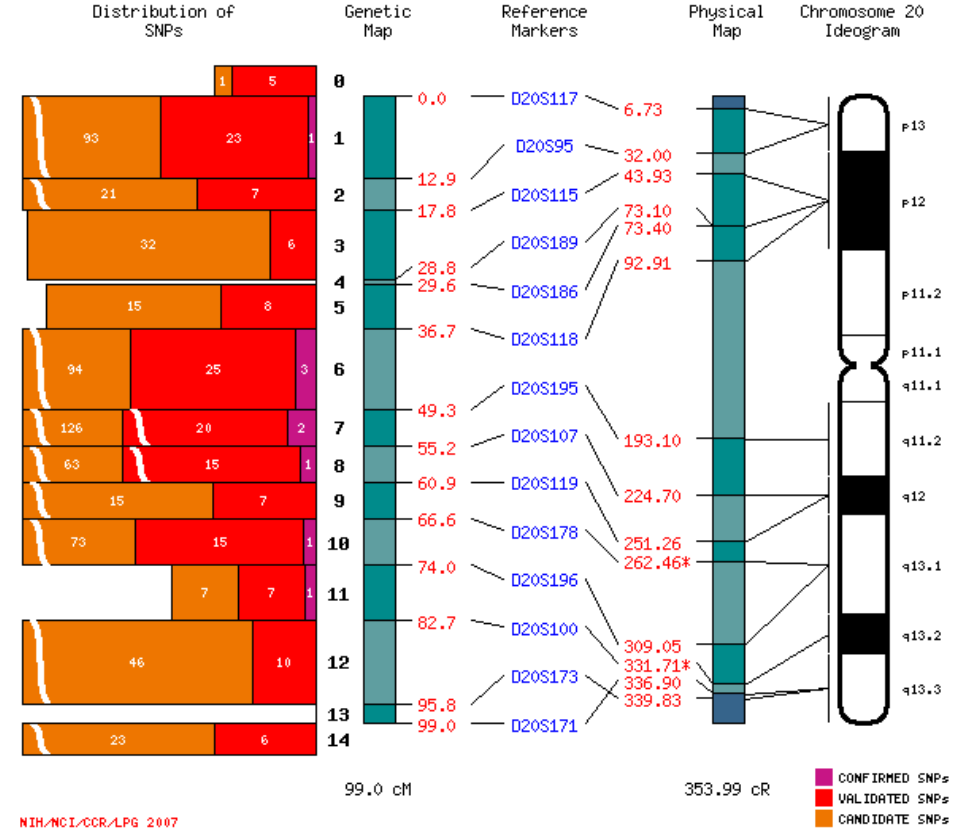

Distribution of SNPs
Genetic Map
Reference Markers
Physical Map
Chromosome 15 Ideogram
0.0
14.7
45.5
51.2
61.9
68.8
78.2
86.1
98.9
110.4
D15S128
D15S165
D15S126
D15S117
D15S153
D15S131
D15S205
D15S127
D15S130
D15S120
28.53
62.68
166.11
206.95
229.45*
243.25*
297.82*
324.81
337.35
346.39
p13
p12
p11.2
p11.1
q11.1
q11.2
q12
q13
q14
q15
q21.1
q21.2
q21.3
q22.1
q22.2
q22.3
q23
q24
q25
q26.1
q26.2
q26.3
110.4 cM
360.78 cR
CONFIRMED SNPs
VALIDATED SNPs
CANDIDATE SNPs
NIH/NCI/CCR/LPG 2007

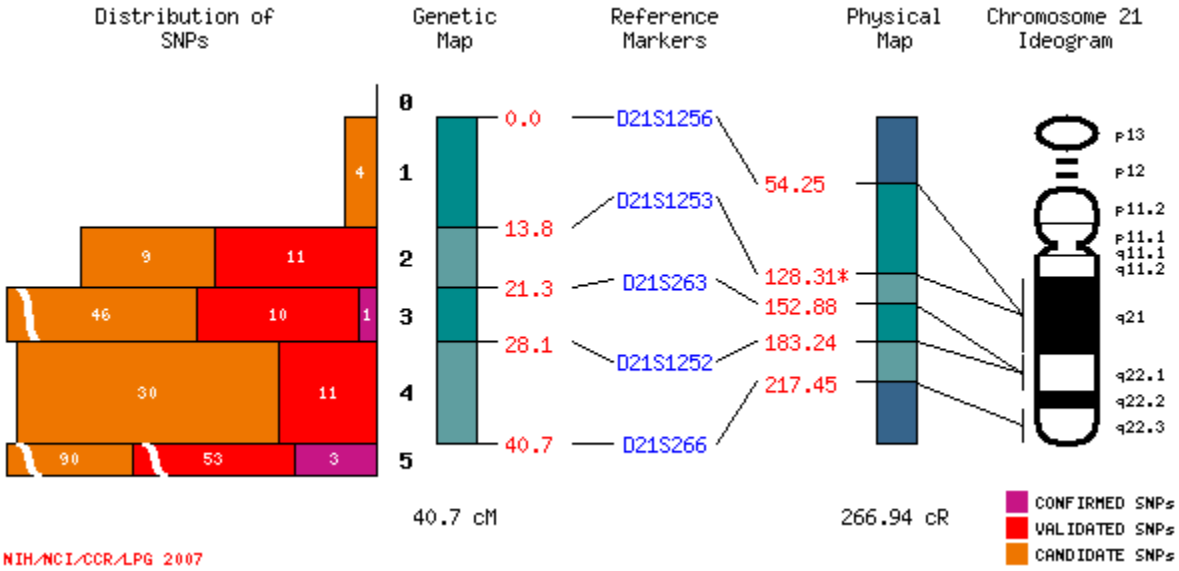

Distribution of SNPs
Genetic Map
Reference Markers
Physical Map
Chromosome 16 Ideogram
0.0
7.6
17.8
34.5
39.3
52.1
63.6
71.5
82.7
93.0
100.4
119.8
D16S423
D16S407
D16S405
D16S420
D16S401
D16S411
D16S415
D16S503
D16S515
D16S516
D16S511
D16S520
71.82*
96.60
176.25
197.70
200.53
340.44
347.05*
384.01
448.85
455.03
467.94*
477.95
p13.3
p13.2
p13.1
p12
p11.2
p11.1
q11.1
q11.2
q12.1
q12.2
q13
q21
q22
q23
q24
119.8 cM
507.89 cR
CONFIRMED SNPs
VALIDATED SNPs
CANDIDATE SNPs
NIH/NCI/CCR/LPG 2007


Distribution of SNPs
Genetic Map
Reference Markers
Physical Map
Chromosome 17 Ideogram
0.0
17.1
24.5
34.9
52.5
58.4
69.2
80.4
88.1
97.5
112.2
123.0
134.6
D17S849
D17S938
D17S945
D17S799
D17S925
D17S798
D17S791
D17S787
D17S808
D17S949
D17S802
D17S784
D17S928
14.27
51.78
62.93*
76.26
131.72*
284.76
333.10
360.47
391.20
448.57
494.51*
521.47
539.36
p13
p12
p11.2
p11.1
q11.1
q11.2
q12
q21.1
q21.2
q21.3
q22
q23
q24
q25
134.6 cM
544.07 cR
CONFIRMED SNPs
VALIDATED SNPs
CANDIDATE SNPs
NIH/NCI/CCR/LPG 2007

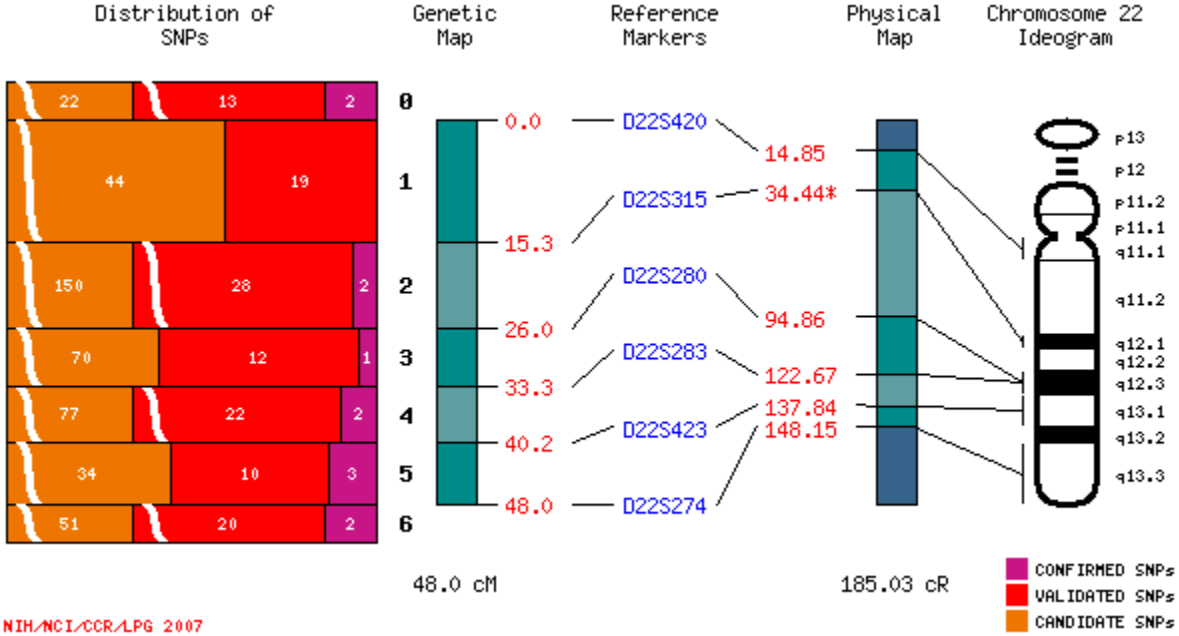

Distribution of SNPs
Genetic Map
Reference Markers
Physical Map
Chromosome 18 Ideogram
0.0
7.8
16.9
30.8
39.8
52.9
62.0
69.9
83.7
95.7
106.7
115.8
119.8
126.7
D18S59
D18S52
D18S452
D18S464
D18S53
D18S478
D18S57
D18S474
D18S64
D18S68
D18S61
D18S469
D18S462
D18S70
13.70
34.63
40.51*
64.12
83.65*
231.42
302.80
355.86
402.82
415.62
444.54
462.05
475.88
477.80
p11.32
p11.31
p11.2
p11.1
q11.1
q11.2
q12.1
q12.2
q12.3
q21.1
q21.2
q21.3
q22
q23
126.7 cM
490.38 cR
CONFIRMED SNPs
VALIDATED SNPs
CANDIDATE SNPs
NIH/NCI/CCR/LPG 2007


Distribution of SNPs
Genetic Map
Reference Markers
Physical Map
Chromosome 19 Ideogram
0.0
5.9
24.3
31.6
44.2
52.1
57.6
84.6
94.4
D19S209
D19S216
D19S221
D19S226
D19S414
D19S220
D19S420
D19S418
D19S210
29.59
35.88
71.17
82.38
185.84
221.60*
247.53*
280.26
285.92
p13.3
p13.2
p13.1
p12
p11
q11
q12
q13.1
q13.2
q13.3
q13.4
94.4 cM
308.68 cR
CONFIRMED SNPs
VALIDATED SNPs
CANDIDATE SNPs
NIH/NCI/CCR/LPG 2007

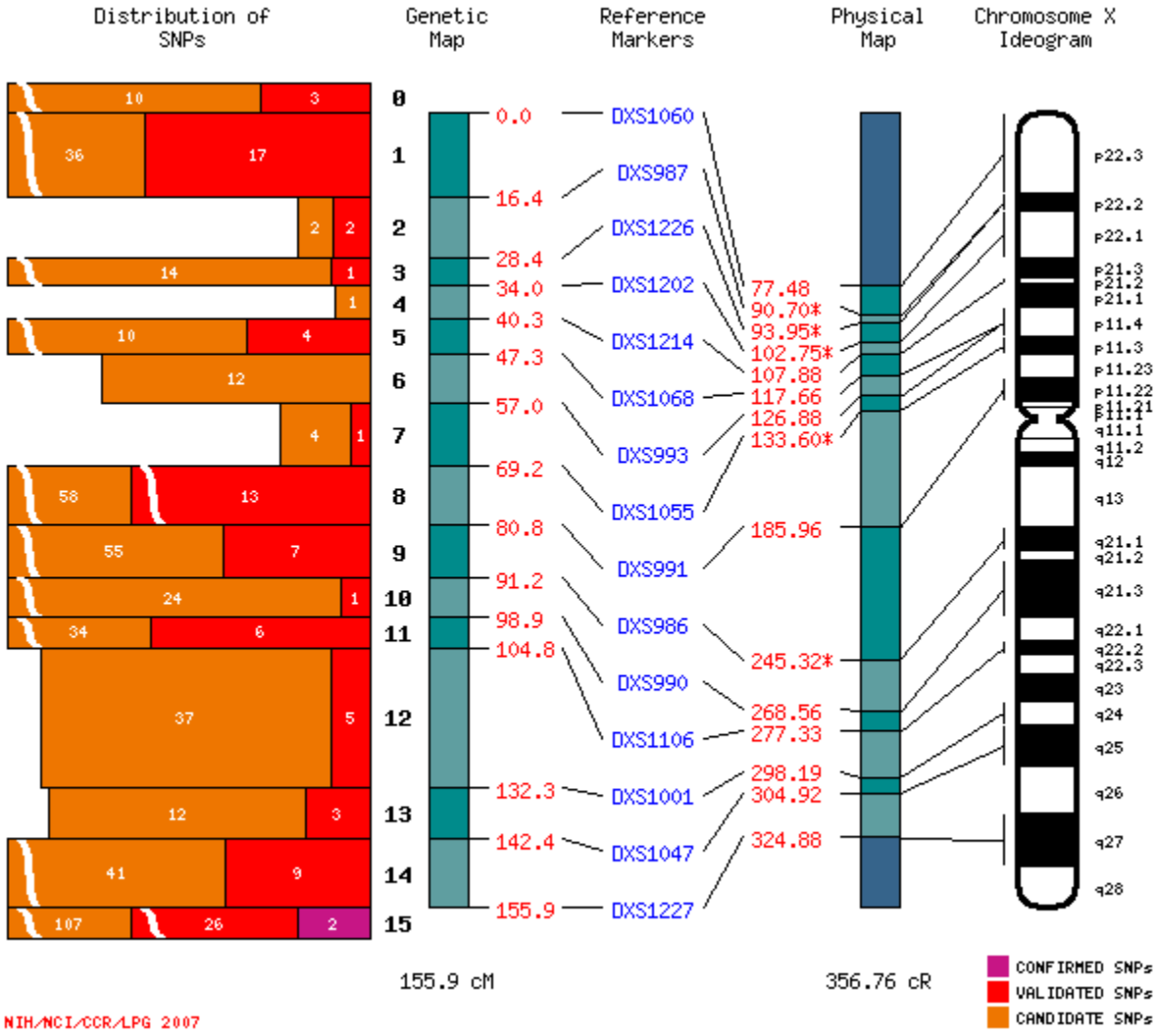

Distribution of SNPs
Genetic Map
Reference Markers
Physical Map
Chromosome 20 Ideogram
0.0
12.9
17.8
28.8
29.6
36.7
49.3
55.2
60.9
66.6
74.0
82.7
95.8
99.0
D20S117
D20S95
D20S115
D20S189
D20S186
D20S118
D20S195
D20S107
D20S119
D20S178
D20S196
D20S100
D20S173
D20S171
6.73
32.00
43.93
73.10
73.40
92.91
193.10
224.70
251.26
262.46*
309.05
331.71*
336.90
339.83
p13
p12
p11.2
p11.1
q11.1
q11.2
q12
q13.1
q13.2
q13.3
99.0 cM
353.99 cR
CONFIRMED SNPs
VALIDATED SNPs
CANDIDATE SNPs
NIH/NCI/CCR/LPG 2007



NIH/NCI/CCR/LPG 2007

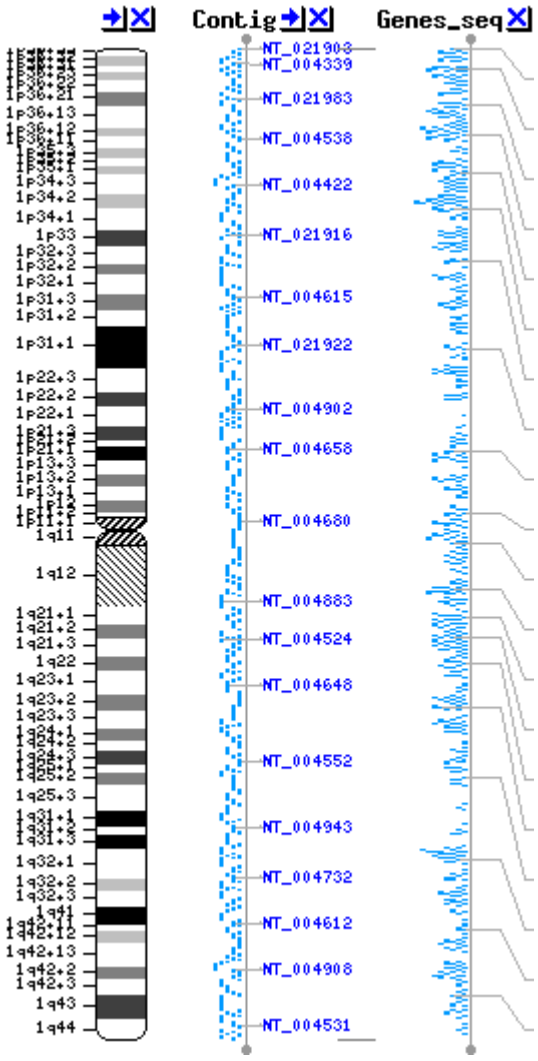


NIH/NCI/CCR/LPG 2007


Distribution of SNPs
Genetic Map
Reference Markers
Physical Map
Chromosome X Ideogram
0.0
16.4
28.4
34.0
40.3
47.3
57.0
69.2
80.8
91.2
98.9
104.8
132.3
142.4
155.9
DXS1060
DXS987
DXS1226
DXS1202
DXS1214
DXS1068
DXS993
DXS1055
DXS991
DXS986
DXS990
DXS1106
DXS1001
DXS1047
DXS1227
77.48
90.70*
93.95*
102.75*
107.88
117.66
126.88
133.60*
185.96
245.32*
268.56
277.33
298.19
304.92
324.88
155.9 cM
356.76 cR
CONFIRMED SNPs
VALIDATED SNPs
CANDIDATE SNPs
NIH/NCI/CCR/LPG 2007

Delta Chromosomes

Press Here

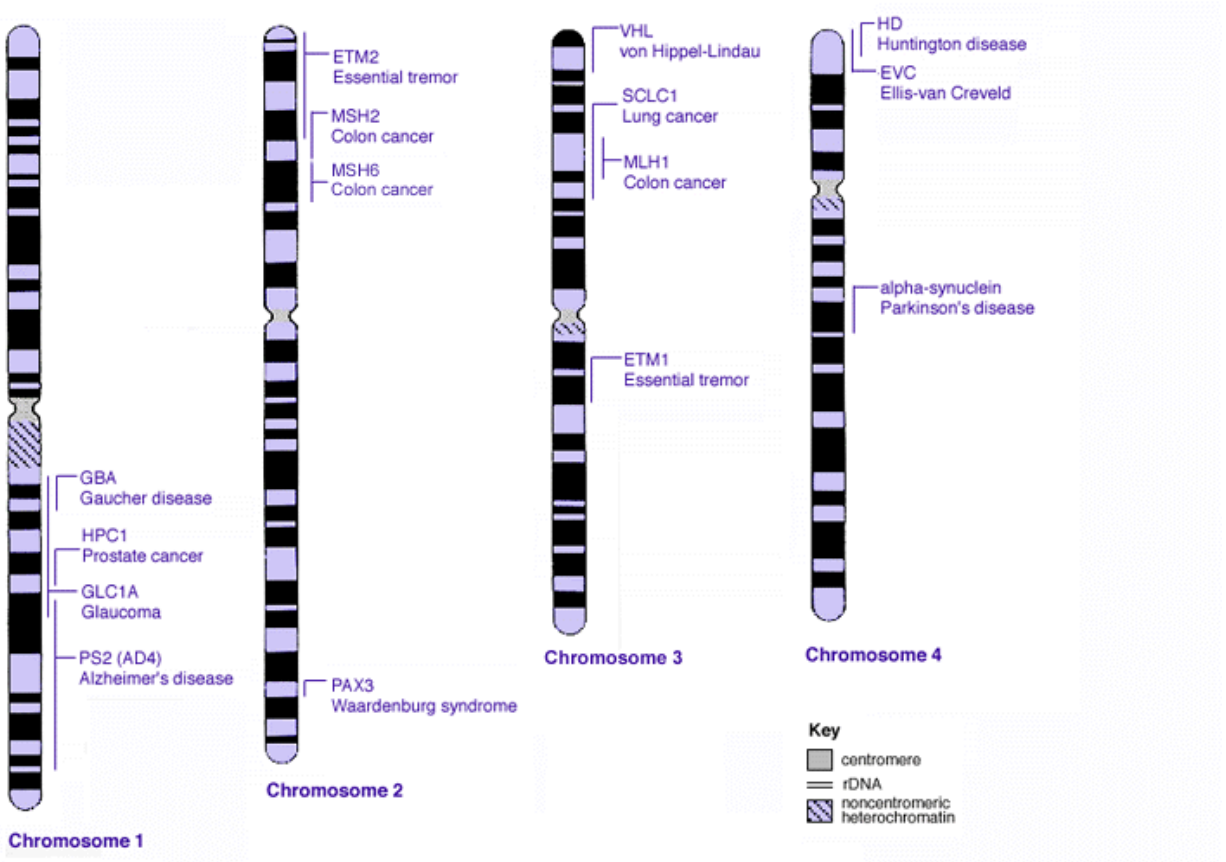


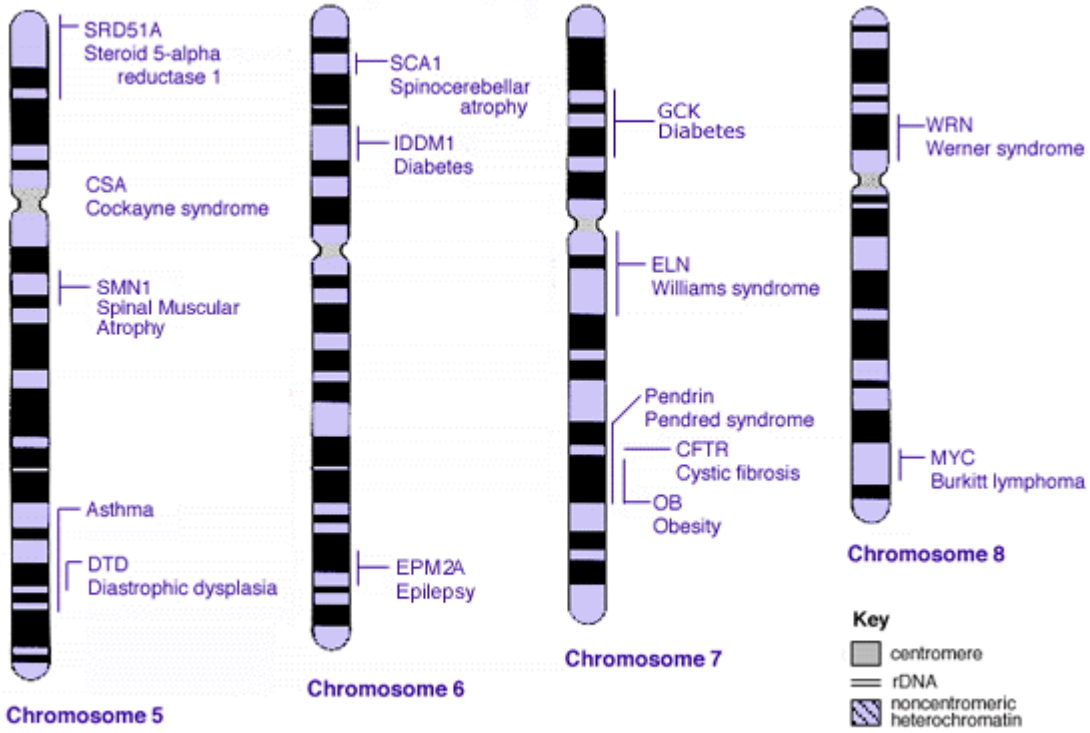
symbol	orient.	links	cyto.	full name
DKFZP564C186	+	av sv	1pter-1p12	DKFZP564C186 protein
SRM	-	av sv	1p36-p22	spermidine synthase
PLA2G2A	-	av sv	1p35	phospholipase A2, group IIA (platelets, synovial fluid)
PRO2047	+	av sv	1	PRO2047 protein
FLJ10468	+	av sv	1	hypothetical protein FLJ10468
FAAH	-	av sv	1p35-p34	fatty acid amide hydrolase
C8B	-	av sv	1p32	complement component 8, beta polypeptide
GADD45A	-	av sv	1p31.2-p31.1	growth arrest and DNA-damage-inducible, alpha
PRKCL2	+	av sv	1pter-1q31.1	protein kinase C-like 2
LOC51189	+	av sv	1pter-1q31.1	ATPase inhibitor precursor
FLJ10330	+	av sv	1	hypothetical protein FLJ10330
HPRP3P	+	av sv	1q21.1	U4/U6-associated RNA splicing factor
ARNT	+	av sv	1q21	aryl hydrocarbon receptor nuclear translocator
JTB	-	av sv	1q21	jumping translocation breakpoint
PEA15	+	av sv	1q21.1	phosphoprotein enriched in astrocytes 15
F5	-	av sv	1q23	coagulation factor V (proaccelerin, labile factor)
FLJ10083	-	av sv	1	hypothetical protein FLJ10083
ST16	+	av sv	1	suppression of tumorigenicity 16 (melanoma differentiation)
ESRRG	-	av sv	1q41	estrogen-related receptor gamma
CHS1	-	av sv	1q42.1-q42.2	Chediak-Higashi syndrome 1

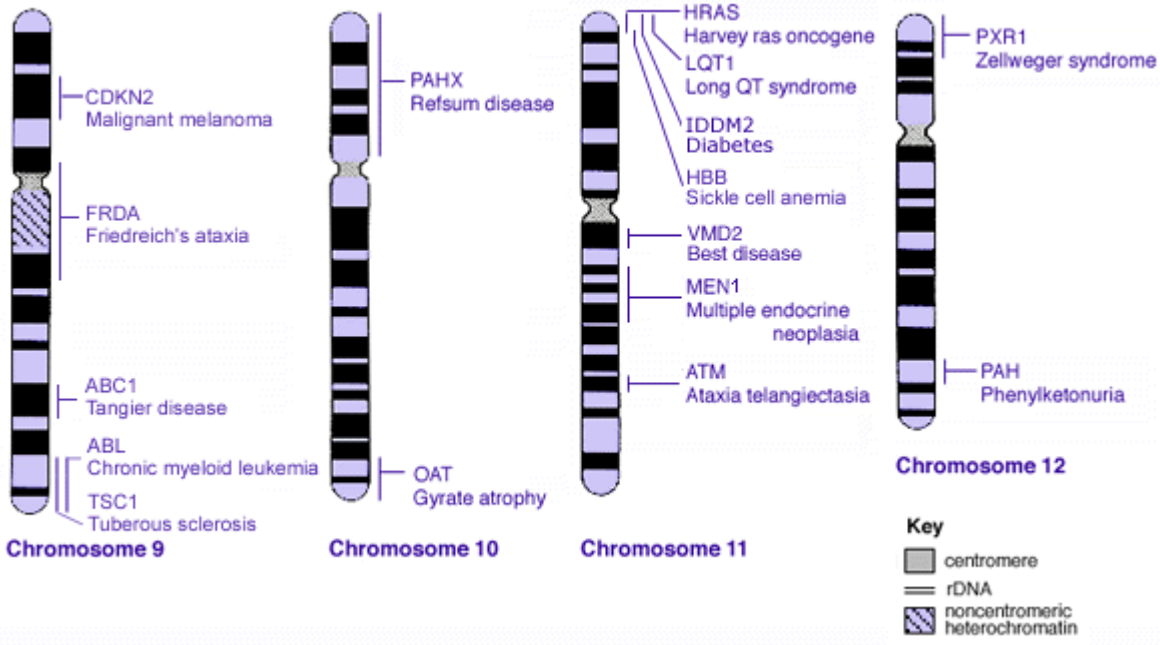
A. Delta Chromosome 1
B. Delta Chromosome 2
C. Delta Chromosome 3
D. Delta Chromosome 4
E. Delta Chromosome 5
F. Delta Chromosome 6
G. Delta Chromosome 7
H. Delta Chromosome 8
I. Delta Chromosome 9
J. Delta Chromosome 10
K. Delta Chromosome 11
L. Delta Chromosome 12
M. Delta Chromosome 13
N. Delta Chromosome 14
O. Delta Chromosome 15
P. Delta Chromosome 16
Q. Delta Chromosome 17
R. Delta Chromosome 18
S. Delta Chromosome 19
T. Delta Chromosome 20
U. Delta Chromosome 21
V. Delta Chromosome 22
W. Delta Chromosome 23
X. Delta Chromosome 24

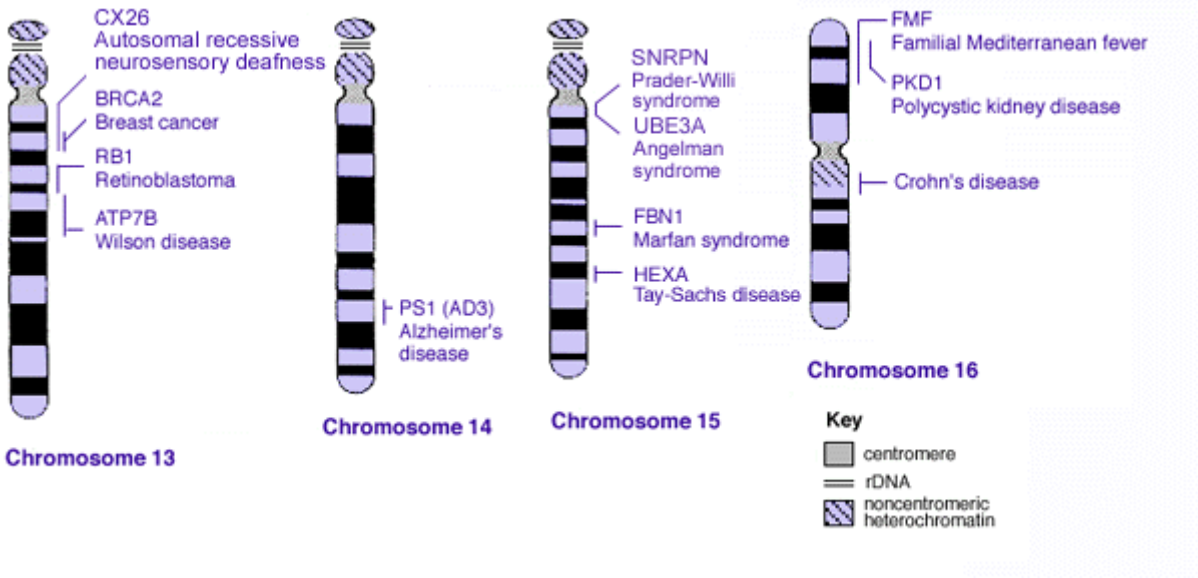
Echo Chromosomes

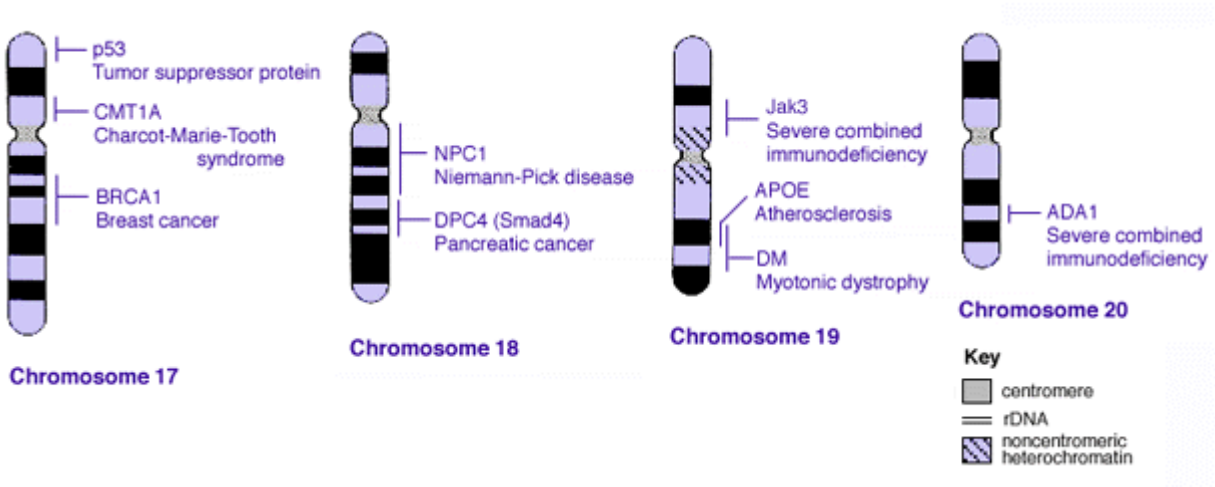
Disease Histogram of Chromosomes – 1,2,3&4

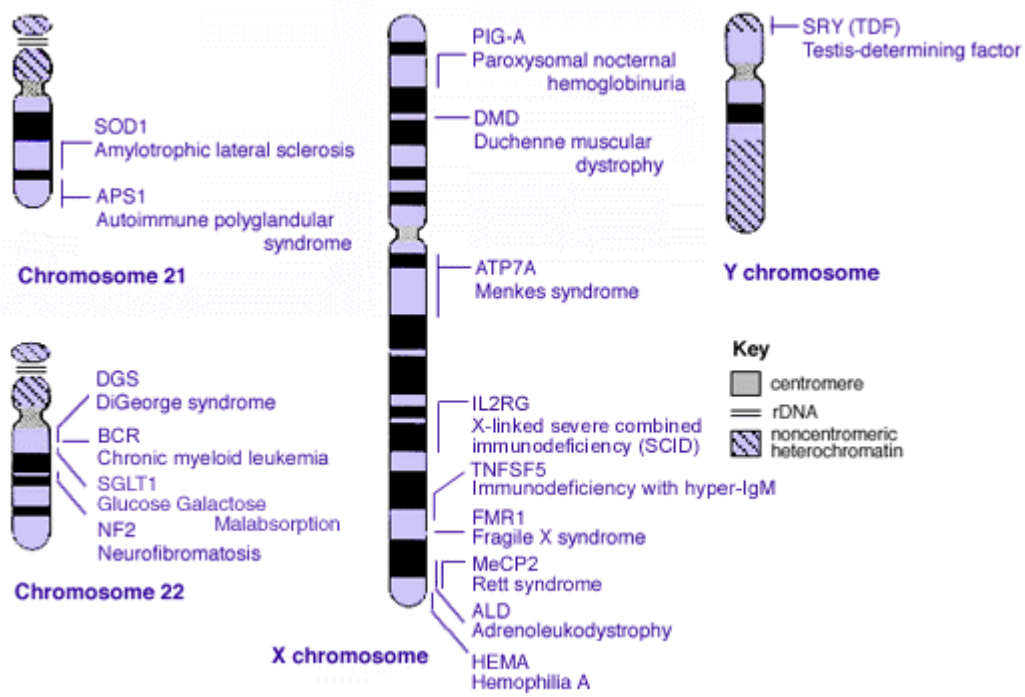



SRD51A
Steroid 5-alpha reductase 1
CSA
Cockayne syndrome
SMN1
Spinal Muscular Atrophy
Asthma
DTD
Diastrophic dysplasia
Chromosome 5
SCA1
Spinocerebellar atrophy
IDDM1
Diabetes
EPM2A
Epilepsy
Chromosome 6
GCK
Diabetes
ELN
Williams syndrome
Pendrin
Pendred syndrome
CFTR
Cystic fibrosis
OB
Obesity
Chromosome 7
WRN
Werner syndrome
MYC
Burkitt lymphoma
Chromosome 8
Key
centromere
rDNA
noncentromeric heterochromatin

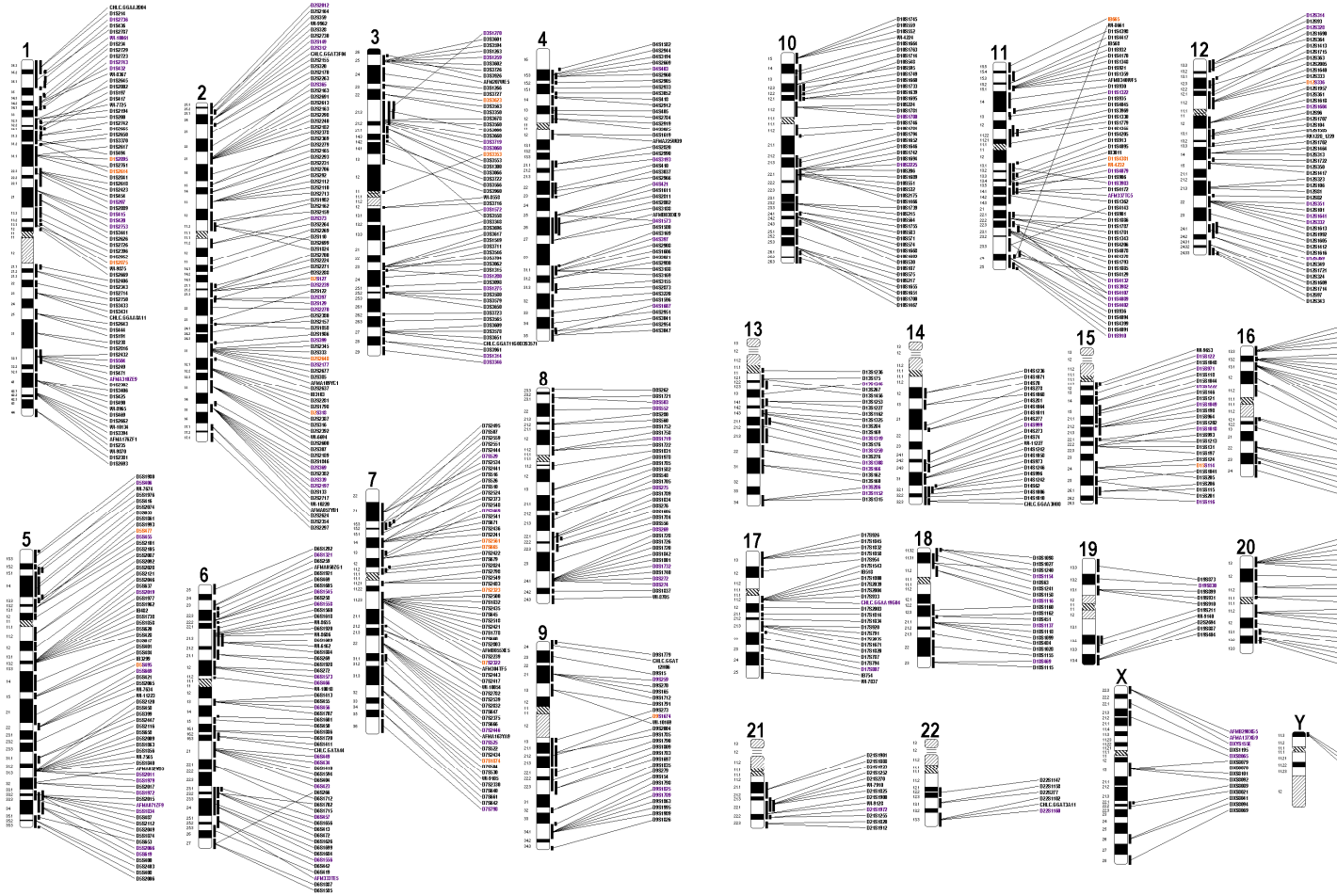

CDKN2
Malignant melanoma
FRDA
Friedreich's ataxia
ABC1
Tangier disease
ABL
Chronic myeloid leukemia
TSC1
Tuberous sclerosis
Chromosome 9
PAHX
Refsum disease
OAT
Gyrate atrophy
Chromosome 10
HRAS
Harvey ras oncogene
LQT1
Long QT syndrome
IDDM2
Diabetes
HBB
Sickle cell anemia
VMD2
Best disease
MEN1
Multiple endocrine neoplasia
ATM
Ataxia telangiectasia
Chromosome 11
PXR1
Zellweger syndrome
PAH
Phenylketonuria
Chromosome 12
Key
centromere
rDNA
noncentromeric heterochromatin


CX26
Autosomal recessive
neurosensory deafness
BRCA2
Breast cancer
RB1
Retinoblastoma
ATP7B
Wilson disease
Chromosome 13
PS1 (AD3)
Alzheimer's
disease
Chromosome 14
SNRPN
Prader-Willi
syndrome
UBE3A
Angelman
syndrome
FBN1
Marfan syndrome
HEXA
Tay-Sachs disease
Chromosome 15
FMF
Familial Mediterranean fever
PKD1
Polycystic kidney disease
Crohn's disease
Chromosome 16
Key
centromere
rDNA
noncentromeric
heterochromatin


p53
Tumor suppressor protein
CMT1A
Charcot-Marie-Tooth syndrome
BRCA1
Breast cancer
Chromosome 17
NPC1
Niemann-Pick disease
DPC4 (Smad4)
Pancreatic cancer
Chromosome 18
Jak3
Severe combined immunodeficiency
APOE
Atherosclerosis
DM
Myotonic dystrophy
Chromosome 19
ADA1
Severe combined immunodeficiency
Chromosome 20
Key
centromere
rDNA
noncentromeric heterochromatin


SOD1
Amylotrophic lateral sclerosis
APS1
Autoimmune polyglandular syndrome
Chromosome 21
DGS
DiGeorge syndrome
BCR
Chronic myeloid leukemia
SGLT1
Glucose Galactose Malabsorption
NF2
Neurofibromatosis
Chromosome 22
PIG-A
Paroxysomal nocternal hemoglobinuria
DMD
Duchenne muscular dystrophy
ATP7A
Menkes syndrome
IL2RG
X-linked severe combined immunodeficiency (SCID)
TNFSF5
Immunodeficiency with hyper-IgM
FMR1
Fragile X syndrome
MeCP2
Rett syndrome
ALD
Adrenoleukodystrophy
HEMA
Hemophilia A
X chromosome
SRY (TDF)
Testis-determining factor
Y chromosome
Key
centromere
rDNA
noncentromeric heterochromatin

Multi-Level Pictorial



The Upper & Lower Level Change Equation Components for Chromosomal Development & Implementation within a P&D Effort Involving Personnel in a Real-Time or Virtual Scenario Environment

(The 23 or 24 Base Pair Chromosomal Elements within a IBOS[DALP/DOSA/IAOA] Genetic Formula Matrix)

1. P&D Systems User Investigative Profile (Autonomous Agent(s) Request(s)) & Dictionary of Occupational Titles Application Selections [**M/C** 3 part format-right-side (**Measures-Environment/Measures-Human Agents**)] - - **Chromosomal Type Set**/**Chromosomal Sequences**
2. P&D Systems Feasible Ideal Solution Target Study [**G/O** 4 part format-right-side (**Measures-Purpose/Measures-Sequence**)] - - **Chromosomal Type Set**/**Chromosomal Sequences**
3. P&D Systems Investigative Matrixes [**G/O** 3 part format-left-side (**Measures-Inputs/Measures Outputs**] - - **Chromosomal Type Set**/**Chromosomal Sequences**
4. P&D Systems Analysis & Taxonomy Development [**N/S** 5 part format-left-side (**Values-Information Aids/Values-Physical Catalysts**)] - - **Chromosomal Type Set**/**Chromosomal Sequences**
5. P&D Systems Design Classification(s) & Hierarchical Formation [**G/O** 4 part format-right-side (**Measures-Information Aids/Measures-Physical Catalysts**)] - - **Chromosomal Type Set**/**Chromosomal Sequences**
6. P&D Systems Programming & Chromosomal Formula Matrix Development [**M/C** 5 part format-left-side (**Interface-Purpose/Interface-Sequence**)] - - **Chromosomal Type Set**/**Chromosomal Sequences**
7. P&D Systems Group Ordering Logic & MRP/ERP Testing [**P/A** 3 part format-right-side (**Control-Environment/Control-Human Agents**)] - - **Chromosomal Type Set**/**Chromosomal Sequences**
8. P&D Systems Documentation & Procedural Guidelines[**N/S** 3 part format-left-side (**Values-Purpose/Values-Sequence**)] - - **Chromosomal Type Set**/**Chromosomal Sequences**
9. P&D Systems Conversion & Analogous Implementations [**G/O** 3 part format-right-side (**Fundamental-Purpose/Fundamental-Sequence**)] - - **Chromosomal Type Set**/**Chromosomal Sequences**
10. P&D Systems Maintenance, Enterprise Work Architectural Profile & Autonomous Agent(s) Repository [**G/O** 4 part format-left-side (**Fundamental-Environment/Fundamental-Human Agents**)] - - **Chromosomal Type Set**/**Chromosomal Sequences**
11. P&D Systems Evaluation & Alphanumeric Computations [**N/S** 3 part format-left-side (**Future-Inputs/Future-Outputs**)] - - **Chromosomal Type Set**/**Chromosomal Sequences**

1. **P&D Project Initiation** (Hardware/Software) **Power/Authority** Chromosomal Configurations [(**Control-Information Aids/Control-Physical Catalysts**)] - - **Chromosomal Type Set**/**Chromosomal Sequences**
2. **P&D Project Development** (The Project) **Norms/Standards** Chromosomal Configurations [(**Future-Purpose/Future-Sequence**)] - - **Chromosomal Type Set**/**Chromosomal Sequences**
3. **P&D Project Implementation** (The User Climate/Autonomous Agent Conditional Formation) **Goals/Objectives** Chromosomal Configurations [(**Control-Purpose/Control-Sequence**)] - - **Chromosomal Type Set**/**Chromosomal Sequences**
4. **P&D Post Project Evaluation** (The Systems Analysts/Autonomous Agent Activities) **Morale/Cohesion** Chromosomal Configurations [(**Control-Inputs/Control-Outputs**)] - - **Chromosomal Type Set**/**Chromosomal Sequences**

1. P&D Subordinate Genetic-Based Environmental Inputs [3 part **Norms/Standards**] [(**Values-Inputs/Values-Outputs**)] - - **Chromosomal Type Set**/**Chromosomal Sequences**
2. P&D Subordinate Genetic-Based Computer Matrixes [3 part **Norms/Standards**] [(**Future-Information Aids/Future-Physical Catalysts**)] - - **Chromosomal Type Set**/**Chromosomal Sequences**

3. P&D Subordinate Genetic-Based Environmental Outputs [3 part **Norms/Standards**] [(**Values-Environment/Values-Human Agents**)] - - **Chromosomal Type Set**/**Chromosomal Sequences**

1. P&D Method Phase-One [5 part **Goals/Objectives** (The Dictionary of Occupational Titles)] [(**Interface-Information Aids/Interface-Physical Catalysts**)] - - **Chromosomal Type Set**/**Chromosomal Sequences**
2. P&D Method Phase-Two [5 part **Goals/Objectives** (The Dictionary of Occupational Titles)] [(**Interface-Inputs/Interface-Outputs**)] - - **Chromosomal Type Set**/**Chromosomal Sequences**
3. P&D Method Phase-Three [5 part **Goals/Objectives** (The Dictionary of Occupational Titles)] [(**Future-Environment/Future-Human Agents**)] - - **Chromosomal Type Set**/**Chromosomal Sequences**
4. P&D Method Phase-Four [5 part **Goals/Objectives** (The Dictionary of Occupational Titles)] [(**Fundamental-Information Aids/Fundamental-Physical Catalysts**)] - - **Chromosomal Type Set**/**Chromosomal Sequences**
5. P&D Method Phase-Five [5 part **Goals/Objectives** (The Dictionary of Occupational Titles)] [(**Fundamental-Inputs/Fundamental-Outputs**)] - - **Chromosomal Type Set**/**Chromosomal Sequences**

Legend – [**Gaius Julius Caesar**] **Hierarchical format for Economic Legions**

The Chromosomal Elements within a IBOS[DOSA/DALP/IAOA] Genetic-Based Consultative P&D Formula Matrix

24. INTERFACE-ENVIRONMENT

1. MEASURES-ENVIRONMENT/MEASURES-HUMAN AGENTS
2. MEASURES-PURPOSE/MEASURES-SEQUENCE
3. MEASURES-INPUTS/MEASURES-OUTPUTS
4. VALUES-INFORMATION AIDS/VALUES-PHYSICAL CATALYSTS
5. MEASURES-INFORMATION AIDS/MEASURES-PHYSICAL CATALYSTS
6. INTERFACE-PURPOSE/INTERFACE-SEQUENCE
7. CONTROL-ENVIRONMENT/CONTROL-HUMAN AGENTS
8. VALUES-PURPOSE/VALUES-SEQUENCE
9. FUNDAMENTAL-PURPOSE/FUNDAMENTAL-SEQUENCE
10. FUNDAMENTAL-ENVIRONMENT/FUNDAMENTAL-HUMAN AGENTS
11. FUTURE-INPUTS/FUTURE-OUTPUTS
12. CONTROL-INFORMATION AIDS/CONTROL-PHYSICAL CATALYSTS
13. FUTURE-PURPOSE/FUTURE-SEQUENCE
14. CONTROL-PURPOSE/CONTROL-SEQUENCE
15. CONTROL-INPUTS/CONTROL-OUTPUTS
16. VALUES-INPUTS/VALUES-OUTPUTS
17. FUTURE-INFORMATION AIDS/FUTURE--PHYSICAL CATALYSTS
18. VALUES-ENVIRONMENT/VALUES-HUMAN AGENTS
19. INTERFACE-INFORMATION AIDS/INTERFACE-PHYSICAL CATALYSTS
20. INTERFACE-INPUTS/INTERFACE-OUTPUTS
21. FUTURE-ENVIRONMENT/FUTURE-HUMAN AGENTS
22. FUNDAMENTAL-INFORMATION AIDS/FUNDAMENTAL-PHYSICAL CATALYSTS
23. FUNDAMENTAL-INPUTS/FUNDAMENTAL-OUTPUTS

24. INTERFACE-HUMAN AGENTS

The Genetic-Based Consultative P&D Formula Matrix

The System Matrix processes inputs into outputs that achieve & satisfy a purpose or purposes through the use of human, physical & information resources in a technical, sociological & physical environment. The System Matrix can vary in size. Thus, bigger levels in the purposeful hierarchy of systems incorporate smaller systems, which are subroutines, subsystems or components. Each system matrix shows the related horizontal or parallel systems, either within or outside the organizational unit of the client system.

Each system is thus a complex set of interrelated elements. The basic set defines the broad purpose & values of the larger entity or organizational unit, within which the system does or will exists. Each system matrix achieves an end. Thus, the purpose, function or result sought from a system is the first element, and each subsystem has a least one purpose.

Each system matrix receives physical, informational, &/or human items from smaller, larger, & parallel systems to process into a desired state that will achieve its purpose. Therefore, every subsystem or routine has inputs.

Each system matrix provides physical, informational, &/or human items or services to its smaller, larger, & horizontal systems. These outcomes represent the means whereby the purposes of the system are achieved. Therefore, each system or subroutine has outputs. Similarly, five other elements can be developed from this format: sequence, environment, human agents, physical catalysts, & information aids. Moreover, six dimensions for each of these elements of the System Matrix will provide significant operationality with minimal redundancy.

These dimensions will specify the precise conditions for each element in a specific situation: **(1)** fundamental existence characteristics; **(2)** values, beliefs & desires; **(3)** measures to assess the accomplishment of fundamental & value dimensions; **(4)** control or dynamic methods of ensuring achievement of fundamental values, & measures specifications; **(5)** interface relationships of fundamental, values, measures, and control specifications with other system matrixes & other elements in its system; and **(6)** future existence or desired changes & improvements that can be foreseen in fundamental, values, measures, control, & interface specifications.

The System Matrix also provides an orderly way of denoting all possible types of information to consider in specifying a system. The questions raised by probing what specifications should be developed for each cell are almost all-inclusive. They number far more than the usually suggested who, what, why, where, when, & how. They are also much more specific than the usual questions the Matrix appears to suggest are available. In addition to the 16 fundamental & value dimension questions, there are at least 16 measures dimension questions about the fundamental & values specifications, 24 control dimension questions, 32 interface, & 40 future.

	Fundamental: Basic or Physical, Characteristics- What, How, Where, or Who **(GROUP FORMAT)**	Values: Motivating Beliefs, Global Desires, Ethics, Moral Matters **(NORMS/STANDARDS)**	Measures: Objectives (Criteria, Merit and Worth Factors), Goals (How Much, When, Rates, Performance Specifications) **(GOALS/OBJECTIVES)**	Control: How to Evaluate and Modify Element or System as it Operates **(POWER/AUTHORITY)**	Interface: Relation of all Dimensions to other Systems or Elements **(MORALE/COHESION)**	Future: Planned Changes and Research Needs for all Dimensions
Purpose: mission, aim, need, primary concern, focus						
Inputs: people, things, information to start the sequence						
Outputs: desired (achieves purpose) and undesired outcomes from sequence						
Sequence: steps for processing inputs, flow, layout, unit operations						
Environment: physical & attitudinal, organization, setting, etc.						
Human agents: skills, personnel, rewards, responsibilities, etc.						
Physical catalysts: equipment, facilities, etc.						
Information aids: books, instructions, etc.						

The Genetic-Based Consultative P&D System Elements

1. Purpose The mission, aim, need, primary concern, or function of or results sought from a system. The purpose is the contribution made to or necessary for a larger system in the hierarchy(ies). A purpose is **what** the system is to accomplish, with no emphasis on **how** it is to be accomplished.

2. Inputs Any physical items, information, and/or human beings on which work, conversion, or processing takes place to arrive at the output(s). **Physical items** could be coils of steel, powdered plastic, money (the actual currency and coins), the mark-sense punch card, the sales order form, and so on. Information could be a bank account balance (printed on a piece of paper), whereabouts of the president (secretary's explanation), number of toasters ordered (sales order form), amount of production on machine 472 (orientation of iron particles on a magnetic tape), history of the conflicts between key managers (perceptions in the minds of people), etc. **Human beings** relevant in this context could be sick people entering a hospital, a housewife shopping at a grocery store, a family wanting house plans, a student attending a college, an overweight person visiting a reducing salon, etc.

A combination input is the return of previous outputs of the system. For example, a large system for manufacturing airplanes includes the reentry of each airplane for major periodic maintenance. A patient may reenter a hospital after having been discharged. User information about product performance serves as new input to the product design system.

Every system requires at least two of the three types of input. A manufacturing system, for example, will require information about alloy, tensile and yield strengths, gauge, and width to accompany the physical input of a coil of steel. A patient entering the system of a hospital represents human (previous medical history and symptoms), and physical (personal belongings) information inputs. A system which is a board of directors meeting needs inputs of information and humans.

3. Outputs Desired (and undesired) physical items, information, humans and/or services (response, event, policy, reaction, safety level, correction, etc.) which result from working on or converting inputs. Desired outputs achieve the selected and bigger purposes by adding net value to the inputs. Undesired outputs include such things as dislocations, pollutants, scrap, and trash, for which provisions must be included in the system specifications. Outputs also include substantive properties, performance, and physical or chemical characteristics of the output when actually being used. For example, the dynamic characteristics (cornering, power pickup, shock absorption ability, or acceleration) of an automobile output are a part of output itself.

4. Sequence The conversion, work, process, transformation, or order and cycle of steps or events by which the inputs become the outputs. The basic steps are the essential "unit operations" or identifiable changes in the state of the inputs which lead to their transformation into outputs. Additional steps include causal bonds, movement, storage, meeting, decision, and control, which enable the unit operations to take place. Parallel channels for processing different inputs are often included, along with various connective points to interrelate the channels.

5. Environment The physical and sociological (psychological, legal, political, economic) factors or ambiance (as the French call it) within which the other elements are to operate. These are always changing. Many are usually outside the influence of the system itself, yet others can be modified or specified for the system. Physical or "climatic" factors include temperature, humidity, noise, dirt, light, colors of machines and walls, and so forth. Ecological physical factors "outside" the system include spatial aspects, accessibility, and shapes and relationships in the design of the physical facilities and equipment.

Sociological factors include the state of technology within which the organizational unit operates, the cultural and historical determinants of attitudes, and the society's economic conditions. More specific factors concern the attitudes of the managerial and supervisory personnel, morale and "reality" disposition of working forces, the operating controls and rules for personnel, and the social interactions and communications of the people involved. Sociological environment forms the larger context of externalities which "own" or "set the stage" for the system. The Japanese, for example, do not build factories or plants with an entrance on the northeast side, the devil’s gate. The managerial style and organizational structure sets another environmental factor: autocratic, paternalistic, bureaucratic, permissive, diplomatic, or democratic

6. Human Agents Human beings on differentiated levels who are aids in the steps of the sequence, without becoming part of the outputs. Human agent activities or methods to aid in the sequence include the whole range of human capabilities: talking, writing, expending energy in manipulating controls and/or changing input items, reasoning, performing dexterous tasks, decision making, evaluating, learning, creativity, and acting as a diligent monitoring and sensing device. Human beings are either inputs and outputs (patients in a hospital), or human agents (nurses). Overlap exists in most cases, for example, as patients can be human agents aiding other patients, and nurses can be inputs into the cafeteria system.

7. Physical Catalysts Physical resources that are aids in the steps of the sequence without becoming part of the outputs. Typical items are chalkboards, machines, vehicles, chairs, computers, filing cabinets, energy, buildings, tools, jigs, automatic devices, paper, lubricating oil, projector, desks, self-measuring sensors, and pallets. A chicken on an egg farm is a physical catalyst. Each of these illustrative items could be a physical catalyst in one system, or input or output in another system. A computer, for example, may be a physical catalyst in an accounts payable system, an input in a maintenance system, and an output in a production system.

8. Information Aids Knowledge and data resources that help in the steps of the sequence, without becoming part of the outputs. Computer programming instructions, equipment operating manuals, maintenance instructions, standard operating procedures for human agents, and policy manuals are typical information aids. These may also be inputs and outputs in other systems. On occasion, an expert consultant, media advisor, or corporate legal advisor could embody the role of this element.

Summary

Systems can vary in size. Thus, bigger levels in the hierarchy of systems incorporate smaller systems, which are subsystems or components.

Because a hierarchy is often a size-based order of systems, with no superior- inferior relationship implied, a vertical channel of systems can be extended for the area of interest. Each system shoo the related horizontal or parallel systems, either within or outside the organizational unit. System levels do not always correspond with organizational divisions.

Each system is thus a complex set of interrelated elements. The basic set defines the broad purpose and values of the larger entity or organizational unit within which the system does or will exist. Each system achieves an end. Thus, the purpose, function, or result sought from a system is the first element, and each system has at least one purpose.

Each system receives physical, informational, and/or human items from smaller, larger, and parallel systems to process into a desired state that will achieve its purpose. Therefore, every system has inputs.

Each system provides physical, informational, and/or human items or services to its smaller, larger, and horizontal systems. These outcomes represent the means whereby the purposes of the system are achieved. Therefore, each system has outputs.

Similarly, five other elements can be developed from this Axiom: sequence, environment, human agents, physical catalysts, and information aids. The words used for names of elements are unimportant and can vary, whereas the **ideas** represented by each are critical.

The Genetic-Based Consultative P&D System Dimensions

1. Fundamental This dimension must exist or no others can be specified. It is the identity or context of a system. Also referred to as the existence, real-life, or manifestation dimension, it concerns tangible, overt, observable, physical, and/or basic structure characteristics. It includes the basic "what-who-how-where" specifications, along with associated quality levels. It states specifically the intensity, degree to which the specific condition is distinguishable from others, and/or the operation of each element.

Determining the specific fundamental attributes is what the P&D approach seeks to accomplish, so that the conditions thus identified can be implemented. Many terms describe the specific numbers, descriptions, drawings, and so on, including specifications, parameter variables, estimates, relationships, properties, characteristics, and identifications.

2. Values This is the situation-specific form of the values part of this appendix. It also embodies and enlarges on the "satisfy" part of Axiom 8 by stating both the solution values and the human values (disposition to behave in certain ways).

Motivating beliefs, human expectations, global desires, ethics, equity, and moral concerns can be **ascribed in some form to each element.** The most global values are likely candidates for the purpose element. Other descriptions concern how people and organizations "feel" about desirable

results in specifying each element: preferences, basic (unyielding?) or important assumptions (e.g., democratic society), concern with societal life and civil liberties, disposition to a behavior, pleasures, productivity, justice, concern with individual life, relevance, sensitivities, preferred modes of conduct, involvement of others, essential beliefs, sentiments, convenience, human dignity, willingness to shape societal acts and conscience, emphases on successes rather than failures and wrongs, comprehensiveness, safety, and cultural or esthetic properties. Values could thus be said to capture the "standards" that a solution is expected to continue.

Perhaps the most important benefit of the values dimension for each element is the forced review of what the value standards are and how they need to be part of the solution and the decisions in selecting the solution. "On all sides," one sees evidence today of cop-out realism-ostensible efforts to be sensible in dealing with things as they are but that turn out to be a shucking of responsibility.... It is now possible to assess the effect of [the] legalization [of off-track betting and the numbers game].... New York State itself has become a predator in a way that the Mafia could never hope to match.... Millions of dollars are being spent by New York State on lavish advertising on television, on radio, on buses, and on billboards. At least the Mafia was never able publicly to glorify and extol gambling with taxpayer money...[Also consider the] cop-out realism [in] dealing with cigarette-smoking by teenagers and pre-teenagers. Special rooms are now being set aside for students who want to smoke.... The effect of [the] supposedly 'realistic' policy is to convert a ban into benediction. By sanctioning that which [people] deplore, they become part of the problem they had the obligation to meet... The function of [value] standards is not to serve as the basis for mindless repressive measures but to give emphasis to the realities of human experience.

3. Measures Measures change the values dimensions into particular objectives and operational goals. They embody the "achieve" part of Axiom 8, and concern how much and when, including what is needed to overcome entropy. Measures in general concern effectiveness, time, performance, cost and other factors of importance concerning the fundamental specifications. They are indicators of the success of the eventual solution. They include any associated confidence limits.

The word **objectives** identifies the specific categories, units, verifiable indicators, scales, factors of merit, criteria or parameters that are considered the important measures. Forecasts, financial matters and quantitative factors are almost always included. They should conform to what people consider useful for attaining the values and fundamental dimensions, but should also be clear, capable of being measured, reproducible, unequivocal in interpretation, and as accurate as needed. Some typical measures are cost per month, time per service or output per hour, reject rate, reliability life, expense ratio, and profit per year.

Goals assign specific amounts and time and/or cost factors to each objective. Assume that one value is "Improve safety record in the department." An objective might be "decrease accidents," and a goal "reduce monthly accident rate by 30% within a year." Here is another illustration: the value is to improve manpower services; **one** objective of several is to increase placements of disadvantaged people; **one** goal of several would be to increase by 25% per year the number of disadvantaged placements. No number of objectives or goals will ever capture exactly what is meant by the specific values. In addition, some goals will be set by external groups, such as the standards or threshold levels defined by the Bureau of Standards, Underwriters Laboratory, Environmental Protection Agency, Consumer Product Safety Commission, and American National Standards Institute.

4. Control Control comprises methods for ensuring that the fundamental, measures, and even value specifications are maintained as desired (at or within limits around a specified condition) during the operation of the system. Dynamic control of each specification involves **(a)** making measurements of the performance of the specification as the solution or system is in operation,

(b) comparing the actual measurements to the desired specification, and **(c)** taking actions to correct significant deviations if necessary, through human corrections, automated response, advance modifications of equipment, or by changing a desired specification, or planning and designing an overall improvement. A significant deviation between performance and desired specification is interpreted as meaning that the error of taking action when none is really needed is minimal compared to the error of not taking action when it should be taken.

All three parts of the control dimension may be carried out within the system itself, or any one or more may become the responsibility of another system or group. Government regulations illustrate one form of external measurement, comparison, and/or corrective action. Licensing, accrediting, peer review, receiving room inspection, customer surveys and complaints, board of director's review, and outside auditing firms are also possible outside controls. Cost control, waste control, internal audits, and productivity improvement programs illustrate major efforts that may be designed into a solution or activated after implementation. On the other hand, all three parts of the control dimension may be an integral part of the fundamental and measures dimensions of a particular element. For example, a part produced by a machine may be inspected by the operator, or inspection may be done automatically. The effectiveness of corrective action is judged by measuring the extent to which actual performance recovers to the desired specification level. Correction is measured by stability, as when the significant differential disappears as elapsed time increases; accuracy, or closeness of recovery to desired specification; lag time, or speed of response to the action; and performance oscillations as the control-reaction-control-reaction cycles take place.

5. Interface The interface constitutes the relationships of the fundamental, values, measures, and control specifications to other elements and to other systems. Some illustrations of interfaces are inspection of materials received from a vendor, the impact of a changed grading system on parents, shared services with other hospitals, and government reporting regulations related to personnel actions. Illustrations of intrasystem interfaces are process control interactions with human agents, physical catalysts, and information aids. Some of these cause difficulties with element specifications and vice versa.

Interface dimension specifications help in the avoidance of difficulties in getting a system to operate well by anticipating and assessing consequences of negative and hostile interactions. What additional or how much less work will result for other system? What costs will the other system incur? Can the other system be modified to let this system be implemented, or even to have the other system take advantage of the ideas? Perhaps a substitute or add-on "technological shortcut" might be located by such searching for interfaces. What possible disturbances and forces from other systems (lobbying, special interest groups, oil embargo, supreme court decision) will impact on this system (delay service, increase cost)? Can a model (differential equation) express the interrelationships of the factors or variables? How does the P&D professional or team interact with managers/administrators, users/clients/customers, people working in the current system, and so on? Are there cause-effect research results describing how one factor (element or dimension) changes as another varies?

6. Future Anticipated changes in each specification of the other five dimensions at one or more points of time in the future. The future dimension defines the growth, learning rate (evolution, homeostasis) or decay of the specifications. Forecasts of all types (e.g., social attitudes, costs, weather, population) express possible "future" specifications. Also included are specifications on how the specific element dimension is to get to the anticipated stage (a transfer function). The arrival at the desired stage may be planned (obsolescence or gradual termination). May be due to learning and duration, or may require a new P&D effort. Sunset laws and zero-based budgeting illustrate two broad ideas for describing **how** arrival at the future point might be accomplished.

Combining this corollary with Axiom 8 forms the system matrix or morphological box shown on the first page of this section. It represents the prescriptive, universal, and understandable definition of the word **system.** Different words can be used to represent the same ideas as the elements and dimensions. One version in policy making, for example, uses these elements: purpose-relevant reference system, inputs, outputs, structure and process, and operating, information, and human communication requirements. These are detailed by the following dimensions: physical, values, measures criteria, analysis procedures, elemental interfaces, model interfaces, systems interfaces, and anticipated changes.

Another version of the system matrix is shown in next graph on the following page to portray the time component aspects of the future dimension. The lines denoting the cells in the first and second charts are **not** firm divisions, for there are both overlapping and interrelationships among the cells. Each cell, rather, connotes the major thrust of the element/dimension intersections.

The representational matrix provides an orderly way of denoting all possible types of information to consider in specifying a system. Not all elements or dimensions need to be specified in a particular system. Nor is it necessary to have the same amount of information in each cell. The amount can range from an empty set to some large, almost infinite number of models or sets of data. Similar or identical accuracy is not required for the information in each cell. The system matrix is very seldom, if ever, used in exactly this form as a basis for recording information needed in designing a system.

The questions raised by probing what specifications should be developed for each cell are almost all-inclusive. They number far more than the usually suggested who, what, why, where, when, and how. They are also much more specific than the usual questions because more than the 48 questions the matrix appears to suggest a available. In addition to the 16 fundamental and values dimension questions, there are **at least** 16 measures dimension questions about the fundamental and values specifications, 24 control dimension questions, 32 interface, and 40 future, or a total of at least 128 system view of each system matrix cell.

The Computational Techniques by Chromosomal Cells within a Genetic-Based Consultative P&D System

The techniques and models listed in each cell illustrate some that may be useful in accomplishing the functions of the cell. Others may well be applicable, but the following listing is an appropriate stimulator:

(1) Purpose, fundamental. Brain writing, couplet comparison technique, ends-mean chain, intent structures, interviews, map of activity and thought chains, multilevel approach, needs analysis, nominal group technique, objective trees, purpose expansion, relationship chart, relevance trees, sensitivity analysis, scenarios, semilattice tree, surveys, system pyramid.

(2) Purpose, values. Brainstorming, climate analysis, dialectical process, ends-means chain, intent structures, interviews, objectives tree, questionnaire, utility theory.

(3) Purpose, measures. Budgets, correlation analysis, financial investment appraisal, Gantt chart, index analysis, indifference curves, interpretive structural modeling, measurement model monthly operating statement, needs analysis, nominal group technique, objectives or goals survey, objectives pyramid, Planning, Programming, and Budgeting System, profit/volume analysis, return on investment, single-factor and multiattribute utility assessment, subjective probability assessment, subjective 0-100 scaling, variance analysis.

(4) Purpose, control. Annual report of P&D system activities and achievements, board of director review, budget control sheets, control charts, data transformation, external peer

evaluation, influence diagram, management style questionnaire, participative review and control, Planning, Programming, and Budgeting System, trend analysis, value analysis, worst/best case analysis, zero-base budgeting.

(5) Purpose, interface. A fortiori analysis, arbitration and mediation planning, cause/effect assessment, correlation analysis, cross-impact matrix, digraphs, ends-means chain, graph theory, hierarchical structure, influence diagram, intent structures, interaction analysis, interpretive structural modeling, intersectoral analysis, negotiation, objectives tree, ombudsman, opportunity identification, policy graphs, purpose network analysis, relationship chart, sensitivity analysis.

(6) Purpose, future. Each of those in cells 1-5. Conditional demand analysis, extended scenarios, futures research, objectives tree, profits progress (learning function, sociological projection techniques.

(7) Inputs, fundamental. Budgets, conditional demand analysis, contingency forecasting, demographic forecasts monthly operating statements and balance sheets, nominal group technique, partitioning techniques, questionnaire, regression analysis, technological forecasting, telephone polling, time series analysis.

(8) Inputs, values. Brainstorming, dialectical process, group process technique, interviews, questionnaires, sociological projection technique, utility assessment, and utility theory.

(9) Inputs, measures. Budget, checklists, cost-benefit analysis, cost-effectiveness analysis, data transformation, information acquisition preference inventory, judgment analysis technique, judgment policy analysis, measurement model, planning and control technique, preference ordering, psychological scaling, sampling theory, sensitivity analysis, simulation, statistical model, subjective probability assessment, subjective scaling, voting techniques.

(10) Inputs, control. Attitude surveys, board of directors review, budget, checklists, citizen honoraria, control charts for human involvement measures and for information quality and quantity norms, control method, correlation analysis, data base system, employee panels, external peer evaluation, focus group testing, a fortiori analysis, Gantt charts, group process technique, influence diagram, operational games, organization analysis, planning and control technique, program planning budgeting system, probability assessment, productivity circles, questionnaire, replicate information collection, role playing, sensitivity analysis, simulation, statistical model, task force, team building, telephone polling, use testing, value analysis, worst-case analysis, zero-base budgeting.

(11) Inputs, interface. Interface with outputs: charette, computer graphics, correlation analysis, drop-in centers, fishbowl planning, input-output analysis, media-based issue balloting, meetings, open-door policy, public hearing workshops. Others: arbitration and mediation planning, cross-impact matrix, influence diagram, interaction analysis interaction matrix, inter-sectoral analysis, interpretive structural modeling, negotiation, ombudsman, profit/volume analysis, system pyramid, technology assessment.

(12) Inputs, future. Each of those in cells 7-11. Conditional demand analysis, contextual mapping, extended scenarios, forecasting, futures research, new-product early warning system, opportunity identification, progress ("learning") function for quality and quantity measures of effectiveness, regression forecasting, simulation, social indicators, technology assessments and forecasts, time series analysis.

(13) Outputs, fundamental. All available ones are possible as output representations, but a sample of them includes computer graphics, drawings, drop-in centers, fishbowl planning, hotline, input-output analysis, intent structures, interpretive structural models, media-based issue balloting, meetings, open door policy, oval diagrams, photographs, policy graphs, pro forma balance and operating statements, public hearing, public information program, scenario, system matrix, system or semilattice pyramid, workshops.

(14) Outputs, values. Brainstorming, dialectical process, intent structures, questionnaires, sociological projection technique, utility assessment.

(15) Outputs, measures. Benefit-cost analysis, break-even analysis, budget, correlation analysis, data transformation, a fortiori analysis, measurement model, PPBS, product or service life cycle analysis, profit/volume analysis, progress functions, psychological scalings, reliability theory, sensitivity analysis, simulation, subjective probability assessment, variance analysis.

(16) Outputs, control. Budget, cause-effect analysis, central location testing, checklists, control charts, control model, correlation analysis, counter planning, data transformation, decision matrix, employee panels, financial investment appraisal, influence diagram, return on investment, simulation, tables reporting variance to norms, use testing, worst case analysis, zero-base budgeting.

(17) Outputs, interface. With inputs: computer graphics, correlation analysis, drop-in centers, fishbowl planning, input-output analysis, media-based issue balloting, meetings, open-door policy, public hearing, and workshops. With other elements: arbitration and mediation planning, cause-effect analysis, charrette, cross-impact analysis, diagraphs, environmental impact statements, fault tree analysis, impact analysis, influence diagram, interaction analysis, intersectoral analysis, negotiation, new business project screening summary, ombudsman, policy graphs, PPBS, profit/volume analysis, system or semilattice pyramid, and technology assessment.

(18) Outputs, future. Each of those in cells 13-17, plus additional techniques in cell 12.

(19) Sequence, fundamental. Because the P&D system sequence involves all aspects of a time-based P&D, all of the techniques could be involved, especially the change principles. The following just illustrate the differing types for each phase:

1. Delphi, forecasting techniques, function expansion, purpose hierarchy, intent structures, oval diagrams, semi-lattice, system pyramid, tree diagrams.

2. Analogies, bisociation, brain resting, brainstorming, brain writing, dialectical process, morphological box, search for diverse sources of options.

3. Cash flow analysis, causal diagram, cost effectiveness analysis, decision matrix, DELTA chart (decision, event, logic, time, activities), feasibility study, financial investment appraisal, flowchart, goals-achievement matrix, input-output matrix, layout-diagram, multilevel digraph, operations research, optimization, pair comparison, Pareto analysis, return on investment, scenario, social cost benefit analysis, system matrix.

4. Same as **3** plus contingency analysis, cost-benefit analysis, decision tables, forecasting, multiple attribute utility assessment, parameter analysis, program planning method, simulation.

5. Same as **1**, **2, 3,** and **4** plus control charts, questionnaires (cells 21, 22, 23).

(20) Sequence, values. Brainstorming, dialectical process, group process technique, questionnaires, and utility theory.

(21) Sequence, measures. Activity balance line evaluation, break-even analysis, budget, correlation analysis, data transformation, decision tree, Gantt chart, life cycle phasing, line of balance, management operations systems technique, measurement model, milestone chart, network analysis, operations chart, PERT or critical path method (manual or computerized), PERT/COST, precedence diagram method, process chart, RAMPS, statistical model, subjective probability assessment, timeline budget for phases, variance analysis.

(22) Sequence, control. Activity balance line evaluation, activity matrix, budget variance analysis, client/user/citizen/ P&D peer review panels, contingency/worst case analysis, control charts, correlation analysis, data transformation, decision tables, DELTA chart, Gantt chart, influence diagram, line of balance, management operations systems technique, milestone chart, network analysis, operation chart, PERT/COST, PPBS, precedence diagram methods, process chart, RAMPS, scheduling model, simulation, statistical model, task force, zero-base budgeting.

(23) Sequence, interface. Arbitration and mediation, cause/ effect assessment, change principles, contingency tables, correlation analysis, cross-impact analysis, decision tables,

digraphs, force field analysis, improvement program, influence diagram, interaction matrix analysis, interface event control, intersectoral analysis, multiple criteria utility assessment, negotiation, ombudsman, policy graphs, scenarios, subjective probability assessment, surveys.

(24) Sequence, future. Each of those in cells 19-23. Some newer techniques are emerging: computerized Delphi, contingency forecasts, a fortiori analysis, parameter analysis, technological forecasting, worst-case analysis.

(25) Environment, fundamental. Causal diagrams, community attitude survey, Delphi, demographic analysis, dialectical process, dynamic model, gaming and simulation, goals program analysis, intersectoral analysis, interviews, matrix structure, organizational climate analysis, organizational sensing, oval diagrams, parameter analysis, productivity circles, project teams, preference ordering, scenarios, semilattice pyramid, telephone polling, tree diagrams, utility assessment, volunteer group status.

(26) Environment, values. Brainstorming, climate analysis, dialectical process, questionnaires, technology assessment, utility theory.

(27) Environment, measures. Budget, bureaucracy level analysis, cause/effect assessment, climate analysis, correlation analysis, counts and/or ratios of public attendance at P&D meetings, data transformation, demand analysis, econometric models, factor analysis, frequency of P&D system meetings, frequency of updating "pulse" of external environment aspects, magnitude of external pressure, management grid analysis, measurement model, network analysis of P&D system, PPBS, regression analysis, rigidity versus openness analysis, role analysis, statistical model, subjective probability assessment, variance analysis.

(28) Environment, control. Budget, climate analysis trends, control charts, control model, correlation analysis, critical incidence review, data transformation, influence diagram, P&D peer review, PPBS, statistical model, utility assessment, zero-base budgeting.

(29) Environment, interface. Arbitration and mediation planning, cause/effect assessment, correlation analysis, demographic analysis, digraphs, environmental impact statement, factor analysis, fault-tree analysis, force field analysis, graph theory, human development continua, impact analysis, influence diagram, ISM, interaction analysis, intersectoral analysis, interviews, negotiation, ombudsman, organization mirror, organizational sensing, policy graphs, regression analysis, role analysis, surveys, technology and managerial control analysis, tree diagrams, trend analysis.

(30) Environment, future. Each of those in cells 25-29. Adaptive forecasting, contextual mapping, demographic forecasting, forecasting, Markov chains, probabilistic system dynamics, regression forecasting, sales force composite, smoothing, sociological projection technique, substitution analysis, technological forecasting, time series analysis.

(31) Human agents, fundamental. Attitude tests, contingency analysis, creativity techniques (analogy, morphological box, bisociation, brainstorming, brain writing, etc.), interviews, nominal group technique, ombudsman, oval diagrams, personality tests, personality type analysis, role analysis, semilattice pyramid, scenarios, subjective probability assessment, task analysis, task force, wage scale.

(32) Human agents, values. Brainstorming, dialectical process, group process technique, questionnaires, utility theory.

(33) Human agents, measures. Activity sampling, aptitude test, budget, correlation analysis, critical incident technique, data transformation, external examiner to assess performance, financial plans, Gantt chart, historical time/cost data in P&D, information content analysis, job evaluation, measurement model, performance measures tally, PPBS, progress functions and learning curves, quality of working life autonomy, salary versus job education curves, statistical estimation, statistical model, subjective probability assessment, user satisfaction surveys, variance analysis, wage scale, wage surveys, work measurement.

(34) Human agents, control. Aptitude test, budget, contingency analysis, control charts, control model, correlation analysis, counseling interviews, critical incident technique, critical path

method, data transformation, Gantt charts, influence diagram, organizational analysis, peer review, PPBS, performance appraisal, RAMPS, regular retraining courses, semi-annual sample tests or games, statistical model, task force, team building, training, zero-base budgeting.

(35) Human agents, interface. Arbitration and mediation planning, cause/effect assessment, correlation analysis, counseling interviews, cross-impact analysis, decision tables, digraphs, educational curriculum formats, group processes techniques, influence diagram, interaction analysis, interactive computer languages, intersectoral analysis, ISM, negotiation, ombudsman.

(36) Human agents, future. Each of those in cells 31-35.

(37) Physical catalysts, fundamental. Flow path diagrams, layout drawings, nomographs, photographs, physical and mathematical equations describing operating characteristics, physical model, specification listing, templates, three-dimensional models.

(38) Physical catalysts, values. Brainstorming, dialectical process, group process technique, questionnaires, utility theory.

(39) Physical catalysts, measures. Break-even analysis, budget, cash flow analysis, correlation analysis, cost benefit analysis, cost-effectiveness analysis, data transformation, downtime distribution, machine-loading charts, maintenance network, maintenance schedule graph, measurement model, PPBS, progress function, queuing models, social cost-benefit analysis, statistical model, subjective probability assessment, and variance analysis.

(40) Physical catalysts, control. Activity sampling, budget control sheets, control charts, control model, correlation analysis, critical path method, data transformation, influence diagram, interview surveys, maintenance charts, PPBS, RAMPS, replacement model, statistical mode, utilization indices and charts, value analysis, zero-base budgeting.

(41) Physical catalysts, interface. Arbitration and mediation planning, cause/effect assessment, climate analysis, contingency analysis, correlation analysis, cross-impact analysis, digraphs, graph theory, influence diagram, interaction analysis, interaction matrix diagram, intersectoral analysis, ISM, negotiation, ombudsman, semilattice pyramid, telecommunications.

(42) Physical catalysts, future. Each of those in cells 36-41. Modeling of conferences based on technologically advanced physical catalysts, technology assessment, technological forecasting.

(43) Information aids, fundamental. Abstract dimensioning, analysis of variance, career path analysis, case histories, charts, computer graphics, contingency analysis, continuing educational path, decision tables, decision trees, drawings, expected free cash flow model, graphics, graphs group process techniques, hierarchical clustering, histograms, information content analysis, information flowcharts, lattice theory, mathematical and statistical tools (correlation analysis, factor analysis, histogram, Laplace transforms, risk distribution, variance, etc.), mathematical model, mathematical programming technique, modeling, performance/time measurement estimate, physical model, probability assessment, programming languages, recursive programming model, risk analysis, simulation languages, software in structures and packaging, standard operating procedures, system pyramid, time study, utility theory.

(44) Information aids, values. Brainstorming, dialectical process, group process technique, questionnaires, utility theory.

(45) Information aids, measures. Activity sampling, budget, cast flow analysis, computer simulation, contingency analysis, correlation analysis, cost-benefit analysis, cost-effectiveness analysis, data transformation, decision tables, downtime measurements, fault analysis, forecasting, a fortiori analysis, measurement model, morphological analysis, objective tree, PPBS, probability assessment, sensitivity analysis, social cost-benefit analysis, statistical model, subjective probability assessment, surveys, time between request and response, variance analysis.

(46) Information aids, control. Auditing technique, budget, budget control sheets, control charts, control model, correlation analysis, critical path analysis, data base system, data transformation, decision tables, decision trees, flowcharts, forecasting, Gantt charts, influence diagram, PPBS, priority setting or voting, replacement models, RAMPS, standard data charts and tables, statistical model, utilization indices, value analysis, zero-base budgeting.

(47) Information aids, interface. Cause-effect matrix, computer graphics, contingency analysis, correlation analysis, cross-impact matrix, digraphs, a fortiori analysis, influence diagram, interaction analysis, interaction matrix diagrams, intersectoral analysis, ISM, negotiation, ombudsman, parameter analysis, programming-computer interaction analysis, sensitivity analysis, survey questionnaires and interviews, telecommunications.

(48) Information aids, future. Each of those in cells 42-47. Computer programming research, computerized Delphi, cost-benefit analysis, forecasting, gaming, and subjective probability.

The Method Structure for each of the Change Equation Elements within Chromosomal Development & Implementation

Preliminary

1. **Develop preliminary project plan and schedule for Phase 1**
2. **Management review and approval**
3. **Assign staff, review plan and schedule**

A. Problem Analysis and Definition *Software Requirements/Target System*

1. Schedule and perform initial data gathering
   -interviews
   -observation of operations
   -documentation collection
   -questionnaires
   -research

2. Perform initial data analysis
   -identify and verify problems
   -determine organization's information and data needs
   -determine scope or requirements, limitations and constraints

3. **Prepare Design Requirements Statement (DRS)**

4. Presentation of (DRS) to management

5. Management review and direction/approval

6. Identify alternative approaches and complete feasibility analysis for each

7. Prepare **Design Proposal**

8. Presentation to management

9. Management review and decision

10. Prepare expanded **Project Plan** and **Schedule (PPS)** for the alternative approach authorized by management

B. Data Gathering *Software Engineering Management/Project*

1. Schedule and perform expanded data gathering in areas identified by initial data gathering

2. Organized data and identify to facilitate analysis

3. Complete **Data Element Description Sheet** for each data element identified

4. Collect information on requirements for decision-making, operational directives, and reports (both formal and informal)

5. Prepare **Inventory** of **Existing Data Elements**

6. Prepare **Inventory** of **Existing Reporting Requirements**

7. Perform supplemental data gathering as needed

8. Present inventories to management for review

9. Management review and direction/approval

C. Data Analysis *Software Engineering Tools and Methods/System Evolution Initiative*

1. Working with the inventories of elements and reports and using classification analysis work sheets, classify each individual data element by
   -type: controlling, reporting, and supporting
   -use: generic grouping, i.e., descriptive, computational, and quantitative -reports: managerial, operational, and recordkeeping
   -timeliness: operational, transitory, archival, and historical
   -system requirements: size, data retention, updating, maintenance, response requirements, and security -logical/functional relationships with other data
   -current format and media
   -name, **synonym,** and definitions

2. Prepare **Master Classification Lists** of data elements

3. Prepare **Performance Requirements** and **Characteristics Lists**

4. Review findings with management

5. Management direction/approval

D. Development and Implementation of Standards *Software Configuration Management/Organization*

1. Identify and organize the contents of the standards manual

2. Define and incorporate the Administrative and Environmental Standards

3. Develop and incorporate the method standard, for the Data Definition Control System (DDCS)

4. Assemble current data element definitions in a Corporate Glossary

5. Review Glossary and DDCS with management

6. Management direction/approval

7. Train all users in Standards, DDCS, and Corporate Glossary

8. Implement DDCS, Corporate Glossary, and CDB Standards

9. Continue to improve and complete Corporate Glossary

E. Development and Implementation of the Data Integrity and Quality Assurance Program *Software Quality/ System Evolution Initiative*

1. Determine organizational or functional component responsible for the integrity and contents of every data element

2. Establish program, plan and schedule for cleaning up all currently existing files

3. Develop **Methods** for **Auditing Data Element Content** and **Quality**

4. Functional management establishes reliability parameters for each data element

5. Establish data audit management report requirements

6. Present program to all affected managers and top management

7. Management review and direction/approval

8. Institute program and commence cleanups and audits

F. Preliminary Design *Software Design/Technologies*

1. Develop logical design alternatives based upon data classifications

2. Develop logical design alternatives based upon system and functional requirements

3. Develop physical design alternatives based upon
   -file structures
   -access methods
   -available hardware
   -available software

4. Perform trade-off analysis between various design alternatives

5. Prepare **Trade-off Analysis Report**

6. Management review, decision and direction

7. Prepare **Detailed Design Project Plan** and **Schedule**

8. Management review and direction/approval

G. Detailed Design and Testing *Software Testing/Systems Engineering*

1. Prepare the detailed **Design Specifications** for the optimum design approved by management in the previous Phase

2. Management review and direction/approval of the detailed design

3. Prepare **Test Plan** and necessary **Test Data** to test specifications and processes

4. Management review and direction/approval of test plan

5. Perform test and evaluate results

6. Management review and direction/approval of test results

7. Modification and retest as necessary

H. Data Conversion and Implementation *Software Engineering Process/Software Engineering*

1. Develop **Conversion Plan** and **Schedule**

2. Management review and direction/approval

3. Conduct training as necessary

4. Convert data and establish new database

5. Maintain converted data

6. When data conversion is complete, implement operations

7. Management review, direction/approval of conversion and implementation

I. Post-implementation Evaluation *Software Maintenance/Legacy System*

1. Plan and staff for the Post-implementation Evaluation study

2. Conduct the study

3. Prepare the Study Report and present Study Report to management

4. Management review and direction

5. Development phase terminates. Routine maintenance and support begins

The Structural Organization of Genetic-based Autonomous Agents & Textual Bodies of Information Developed from System Chromosomes within a P&D Effort

The following is an analogous review of the structural organization of the human body, as well as other genetic based organisms:

Anatomy of the Human Body

CONTENTS

TWENTIETH EDITION
THOROUGHLY REVISED AND RE-EDITED BY WARREN H. LEWIS
ILLUSTRATED WITH 1247 ENGRAVINGS

PHILADELPHIA: LEA & FEBIGER, 1918
NEW YORK: BARTLEBY.COM, 2000

1. Structure of the Nervous System
2. Development of the Nervous System
3. The Spinal Cord or Medulla Spinalis
4. The Brain or Encephalon
   a. The Hind-brain or Rhombencephalon
   b. The Mid-brain or Mesencephalon
   c. The Fore-brain or Prosencephalon
   d. Composition and Central Connections of the Spinal Nerves
   e. Composition and Central Connections of the Spinal Nerves
   f. Pathways from the Brain to the Spinal Cord
   g. The Meninges of the Brain and Medulla Spinalis
   h. The Cerebrospinal Fluid
5. The Cranial Nerves
   a. The Olfactory Nerves
   b. The Optic Nerve
   c. The Oculomotor Nerve
   d. The Trochlear Nerve
   e. The Trigeminal Nerve
   f. The Abducent Nerve
   g. The Facial Nerve
   h. The Acoustic Nerve
   i. The Glossopharyngeal Nerve
   j. The Vagus Nerve
   k. The Accessory Nerve
   l. The Hypoglossal Nerve
6. The Spinal Nerves
   a. The Posterior Divisions
   b. The Anterior Divisions
   c. The Thoracic Nerves
   d. The Lumbosacral Plexus
   e. The Sacral and Coccygeal Nerves
7. The Sympathetic Nerves
   a. The Cephalic Portion of the Sympathetic System
   b. The Cervical Portion of the Sympathetic System
   c. The Thoracic Portion of the Sympathetic System
   d. The Abdominal Portion of the Sympathetic System
   e. The Pelvic Portion of the Sympathetic System
   f. The Great Plexuses of the Sympathetic System
8. Bibliography

VIII. The Organs of the Senses and the Common Integument (**Textile Methods**)

1. The Peripheral Organs of the Special Senses
   a. The Organs of Taste
   b. The Organ of Smell
   c. The Organ of Sight
      1. The Tunics of the Eye
      2. The Refracting Media
      3. The Accessory Organs of the Eye
   d. The Organ of Hearing
      1. The External Ear

2. The Middle Ear or Tympanic Cavity
3. The Auditory Ossicles
4. The Internal Ear or Labyrinth

e. Peripheral Terminations of Nerves of General Sensations

2. The Common Integument

IX. Splanchnology (**Entertainment Methods**)

1. The Respiratory Apparatus
   a. The Larynx
   b. The Trachea and Bronchi
   c. The Pleuræ
   d. The Mediastinum
   e. The Lungs

X. The Digestive Apparatus (**Agricultural Methods**)

1. The Mouth
2. The Fauces
3. The Pharynx
4. The Esophagus
5. The Abdomen
6. The Stomach
7. The Small Intestine
8. The Large Intestine
9. The Liver
10. The Pancreas

XI. The Urogenital Apparatus (**Educational Methods**)

1. Development of the Urinary and Generative Organs
   a. The Urinary Organs
   b. The Kidneys
   c. The Ureters
   d. The Urinary Bladder
   e. The Male Urethra
   f. The Female Urethra
2. The Male Genital Organs
   a. The Testes and their Coverings
   b. The Ductus Deferens
   c. The Vesiculæ Seminales
   d. The Ejaculatory Ducts
   e. The Penis
   f. The Prostate
   g. The Bulbourethral Glands
3. The Female Genital Organs
   a. The Ovaries
   b. The Uterine Tube
   c. The Uterus
   d. The Vagina
   e. The External Organs

f. The Mammæ

4. The Ductless Glands
   a. The Thyroid Gland
   b. The Parathyroid Glands
   c. The Thymus
   d. The Hypophysis Cerebri
   e. The Pineal Body
   f. The Chromaphil and Cortical Systems
   g. The Spleen

XII. Surface Anatomy and Surface Markings (**Judicial Methods**)

1. Surface Anatomy of the Head and Neck
2. Surface Markings of Special Regions of the Head and Neck
3. Surface Anatomy of the Back
4. Surface Markings of the Back
5. Surface Anatomy of the Thorax
6. Surface Markings of the Thorax
7. Surface Anatomy of the Abdomen
8. Surface Markings of the Abdomen
9. Surface Anatomy of the Perineum
10. Surface Markings of the Perineum
11. Surface Anatomy of the Upper Extremity
12. Surface Markings of the Upper Extremity
13. Surface Anatomy of the Lower Extremity
14. Surface Markings of the Lower Extremity

The Educational Alphabetic Taxonomy for the Genetic Code Used in Establishing Consultative P&D Efforts within each Method

Those subjects previously shown in this document reflect a series of ideologies concerned with how to best apply genetic labels to over 33,000,000 words, concepts or ideas. Since the human genome contains only 192 letters. A series of grammar-based focal points (educational purposeful hierarchies) must be established in order to afford NAME's technology issues, with the ability to transparently incorporate the same set of genetic codons upon those words embodied within the foundation of multiple concepts or ideas. The conceptual format for this educational purposeful hierarchy consist of the following:

1. **Chromosomal Matrix Cells—192 Component Cells** (Coordinated through **64** (16+48) cells of the Genome Matrix)
2. **Managerial Issues—4 Grammatic Managerial Issues Subject Matters** (Power/Authority, Norms/Standards, Morale/Cohesion & Goals/Objectives)
3. **Managerial Interventions—5 Intervening Grammatic Strategies** (Theory, Prescriptive, Catalytic, Confrontational & Acceptant)
4. **Antonyms/Synonyms—2 Grammatic Tactical Series** (Equally applying both complementary & opposing grammatic ideologies toward each word, concept or idea within that single word, concept or idea itself)
5. **Grade Levels—1-16 Educational Grammatic Levels** (K-12, plus 4 Collegiate years or Educational Levels used to express words, concepts or ideas from a single or multiple sources into any educational foundation or mind set)
6. **Client-Base Formats—5 Ideological Grammatic Classifications** (Individual, Group, Inter-Group, Social System & Larger Social System)
7. **Textual Bodies Information Ledger—10-12 Sections or Integrated Supportive Grammatic Focal Points** (Component Parts of Autonomous Agents, Enterprise Work Architectures or any Virtual Biological Entity)
8. **Method Structure—12 Separate Component Parts of the Textual Bodies Information Ledger** (With components **A** – **I** of the structure itself, applied toward each section of the Textual Bodies Information Ledger within a Biological P&D effort, of which, it is also integrated into the DOSA format's Software Application Taxonomy **&** Systems Evolution Initiative)

Integrated Chromosomal Units

Change Equation—23 Chromosomal Units (Initially, the first eleven (**1** – **11**) areas of the Change Equation will function in unison with the connective research issues **1** – **11** of the IBOS autonomous laboratory, and of the Software Application Taxonomy & Systems Evolution Initiative. Which of and within themselves, are an integral part of the DOSA format, as well as each of the twelve components involved in Virtual Biological Method Structuring through search engine or internet technologies. Secondly, the next areas of the Change Equation, sections **1** – **4**, are representative of those chromosomal units involved in the upper levels of a depicted P&D consultative effort, as described in other documents describing this subject matter. Third, the next region of the Change Equation, sections **1** – **3**, are to be connected to the ideological, interdepartmental & organizational platforms, or focal points, of a genetic-based consultative P&D effort. Finally, sections **1** – **5**, are used to integrate all five phases involved in rendering a genetic-based consultative P&D effort, into five separate evolving chromosomal units. With a

grand total of **23** chromosomal units, whose upper & lower infrastructural regions reflect the **46** chromosomal pattern of the human biological effort. Simply put, by applying those words that are relevant only to the conceptual hierarchies above, and in the direction of those genetic issue discussed in the document titled, **Systems Integration**. This structural format under this purposeful hierarchy alone, shall accommodate the capacity to use the same genetic letters upon roughly 33,914,880 similar and/or dissimilar words, concepts or ideas to an effective level of ideological thought or procedural implementation within a traditional planning & design effort through internet resources.