David Kingsley

Rudy J. and Daphne Donohue Munzer Professor in the School of Medicine

Developmental Biology

CONTACT INFORMATION

- **Alternate Contact**

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Bio

ACADEMIC APPOINTMENTS

- Professor, Developmental Biology
- Member, Bio-X
- Member, Wu Tsai Neurosciences Institute

ADMINISTRATIVE APPOINTMENTS

- Director, NIH Center of Excellence in Genomic Science at Stanford: The Genomic Basis of Vertebrate Diversity, (2007-2012)
- Co-Director, Genetics and Developmental Biology Training Grant, (2008-2023)
- Associate Chairman, Department of Developmental Biology, (2012-2023)

HONORS AND AWARDS

- Scholar in Biomedical Research, Lucille P. Markey Foundation (1989 to 1996)
- Investigator, Howard Hughes Medical Institute (1997 to present)
- Fellow, American Academy of Arts and Sciences (2005)
- Conklin Medal for outstanding research in Developmental Biology, Society for Developmental Biology (2009)
- Member, National Academy of Sciences (2011)
- GSA Medal for outstanding research in Genetics, Genetic Society of America (2017)

PROFESSIONAL EDUCATION

- B.S., Yale , Biology (1981)
- Ph.D., MIT , Biology (1986)
- Postdoc, National Cancer Institute - Frederick , Mouse genetics (1987)

PATENTS

- David Kingsley. "United States Patent 7,122,328 Gene involved in mineral deposition and uses thereof", Oct 17, 2006

LINKS

- KingsleyLab Web Site: http://kingsley.stanford.edu

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Wild species show spectacular differences in morphology, physiology, behavior, disease susceptibility, and lifespan. Although many organisms have now been sequenced, we still know relatively little about the specific DNA sequence changes that underlie key species-specific traits. My laboratory uses a combination of genetic and genomic approaches to identify the detailed molecular mechanisms that control evolutionary change in vertebrates, with a focus on 5 fundamental questions:

1. Are new evolutionary traits controlled by countless genetic differences of small effect, or by a few genetic changes with large effects?

2. What genes have changed to produce interesting evolutionary differences in nature?

3. What kinds of mutations have occurred in these genes (e.g., dominant or recessive, coding or regulatory, preexisting or de novo)?

4. How predictable is evolution? If you know how evolution has occurred in one population, can you predict the genes and mutations that underlie the same trait in different populations?

5. How has evolution produced the unique characteristics of humans?

We study these questions using a variety of methods in stickleback fish, mice, and humans.

Stickleback fish have recently diversified in thousands of new postglacial environments, offering an unusually powerful system for mapping the molecular basis of vertebrate evolution. My lab pioneered the development of many new genetic and genomic resources for sticklebacks, including crosses between divergent populations, genetic mapping of traits, comparative genome sequencing, and testing the molecular basis of evolutionary differences using transgenic and CRISPR methods. Our studies have revealed the molecular mechanisms that control repeated evolution of armor plate patterning, pelvic reduction, and spine and skin color changes in nature. We find that big evolutionary changes are controlled by regulatory changes in key developmental control genes. Although inactivating mutations in such genes are deleterious or lethal, evolution can preserve viability and increase fitness of wild populations by tweaking the expression of key control genes in particular tissues. Interestingly, the same genes are used repeatedly when similar phenotypes evolve in different populations, revealing a surprising commonality to the molecular mechanisms controlling evolutionary change in diverse organisms.

Mice are also a powerful system for studying traits and diseases in mammals, and for testing the phenotypic effects of particular sequence changes that have occurred in other species. Our genetic studies in mice have identified fundamental signaling pathways that control formation and patterning of cartilage, bone, and joints, and have revealed the regulatory sequences that control expression of many key genes during development and tissue injury. We also use genome editing in mice to model sequence changes that underlie common traits in other species, including some of the most prevalent pigmentation, height, and arthritis traits found in humans.

The genes and mechanisms that we have identified in fish and mice turn out to control major differences in human morphology, hair color, arthritis susceptibility, and incidence of major psychiatric diseases in billions of people around the world. To further study the genomic changes that underlie key evolutionary traits and diseases in humans, we are developing innovative new genetic approaches to compare gene expression and developmental differences between human and chimpanzee cells in vitro, and to map the specific genomic regions controlling these differences using targeted modification and recombination between primate chromosomes. Although we are still far from knowing the detailed molecular basis of most human traits, we are optimistic that many aspects of this problem can now be studied computationally and experimentally, providing new insights into both human origins and human medicine.

Teaching

COURSES

2025-26

- Genetics and Developmental Biology Training Camp: DBIO 200, GENE 200 (Aut)

2024-25

- Genetics and Developmental Biology Training Camp: DBIO 200, GENE 200 (Aut)

2023-24

- Genetics and Developmental Biology Training Camp: DBIO 200, GENE 200 (Aut)

2022-23

- Genetics and Developmental Biology Training Camp: DBIO 200, GENE 200 (Aut)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

James Hemker, Andrea Navarrete Vargas

Doctoral Dissertation Advisor (AC)

Bohdana-Myroslava Briantseva, Francesca Cohn, Jack Hsu, Austin Katzer

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Developmental Biology (Phd Program)
- Neurosciences (Phd Program)

Publications

PUBLICATIONS

- **Ancient developmental genes underlie evolutionary novelties in walking fish.** *Current biology : CB*

  Herbert, A. L., Allard, C. A., McCoy, M. J., Wucherpfennig, J. I., Krueger, S. P., Chen, H. I., Gourlay, A. N., Jackson, K. D., Abbo, L. A., Bennett, S. H., Sears, J. D., Rhyne, A. L., Bellono, et al

  2024

- **Whole-genome Comparisons Identify Repeated Regulatory Changes Underlying Convergent Appendage Evolution in Diverse Fish Lineages.** *Molecular biology and evolution*

  Chen, H. I., Turakhia, Y., Bejerano, G., Kingsley, D. M.

  2023; 40 (9)

- **Evolution of stickleback spines through independent cis-regulatory changes at HOXDB.** *Nature ecology & evolution*

  Wucherpfennig, J. I., Howes, T. R., Au, J. N., Au, E. H., Roberts Kingman, G. A., Brady, S. D., Herbert, A. L., Reimchen, T. E., Bell, M. A., Lowe, C. B., Dalziel, A. C., Kingsley, D. M.

2022

- **Genetic studies of human-chimpanzee divergence using stem cell fusions.** *Proceedings of the National Academy of Sciences of the United States of America*

  Song, J. H., Grant, R. L., Behrens, V. C., Kucka, M., Roberts Kingman, G. A., Soltys, V., Chan, Y. F., Kingsley, D. M.

  1800; 118 (51)

- **DNA fragility in the parallel evolution of pelvic reduction in stickleback fish.** *Science (New York, N.Y.)*

  Xie, K. T., Wang, G., Thompson, A. C., Wucherpfennig, J. I., Reimchen, T. E., MacColl, A. D., Schluter, D., Bell, M. A., Vasquez, K. M., Kingsley, D. M.

  2019; 363 (6422): 81–84

- **Characterization of a Human-Specific Tandem Repeat Associated with Bipolar Disorder and Schizophrenia.** *American journal of human genetics*

  Song, J. H., Lowe, C. B., Kingsley, D. M.

  2018

- **Ancient selection for derived alleles at a GDF5 enhancer influencing human growth and osteoarthritis risk.** *Nature genetics*

  Capellini, T. D., Chen, H. n., Cao, J. n., Doxey, A. C., Kiapour, A. M., Schoor, M. n., Kingsley, D. M.

  2017; 49 (8): 1202–10

- **A molecular basis for classic blond hair color in Europeans.** *Nature genetics*

  Guenther, C. A., Tasic, B., Luo, L., Bedell, M. A., Kingsley, D. M.

  2014; 46 (7): 748-752

- **The genomic basis of adaptive evolution in threespine sticklebacks.** *Nature*

  Jones, F. C., Grabherr, M. G., Chan, Y. F., Russell, P., Mauceli, E., Johnson, J., Swofford, R., Pirun, M., Zody, M. C., White, S., Birney, E., Searle, S., Schmutz, et al

  2012; 484 (7392): 55-61

- **Human-specific loss of regulatory DNA and the evolution of human-specific traits** *NATURE*

  McLean, C. Y., Reno, P. L., Pollen, A. A., Bassan, A. I., Capellini, T. D., Guenther, C., Indjeian, V. B., Lim, X., Menke, D. B., Schaar, B. T., Wenger, A. M., Bejerano, G., Kingsley, et al

  2011; 471 (7337): 216-219

- **Genetic mechanisms of axial patterning in Apeltes quadracus.** *Evolution letters*

  Herbert, A. L., Lee, D., McCoy, M. J., Behrens, V. C., Wucherpfennig, J. I., Kingsley, D. M.

  2024; 8 (6): 893-901

- **Genomic Sequence of the Threespine Stickleback Iridovirus (TSIV) from Wild Gasterosteus aculeatus in Stormy Lake, Alaska.** *Viruses*

  Yoxsimer, A. M., Offenberg, E. G., Katzer, A. W., Bell, M. A., Massengill, R. L., Kingsley, D. M.

  2024; 16 (11)

- **Evolution of novel sensory organs in fish with legs.** *Current biology : CB*

  Allard, C. A., Herbert, A. L., Krueger, S. P., Liang, Q., Walsh, B. L., Rhyne, A. L., Gourlay, A. N., Seminara, A., Baldwin, M. W., Kingsley, D. M., Bellono, N. W.

  2024

- **Genetic mechanisms of axial patterning in <i>Apeltes quadracus</i>** *EVOLUTION LETTERS*

  Herbert, A. L., Lee, D., Mccoy, M. J., Behrens, V. C., Wucherpfennig, J., Kingsley, D. M.

  2024

- **Fine-scale contemporary recombination variation and its fitness consequences in adaptively diverging stickleback fish.** *Nature ecology & evolution*

  Venu, V., Harjunmaa, E., Dreau, A., Brady, S., Absher, D., Kingsley, D. M., Jones, F. C.

  2024

- **Boundary stacking interactions enable cross-TAD enhancer-promoter communication during limb development.** *Nature genetics*

  Hung, T. C., Kingsley, D. M., Boettiger, A. N.

  2024

- **The genetic basis of novel trait gain in walking fish.** *bioRxiv : the preprint server for biology*
  Herbert, A. L., Allard, C. A., McCoy, M. J., Wucherpfennig, J. I., Krueger, S. P., Chen, H. I., Gourlay, A. N., Jackson, K. D., Abbo, L. A., Bennett, S. H., Sears, J. D., Rhyne, A. L., Bellono, et al
  2023
- **Sea robins** *CURRENT BIOLOGY*
  Allard, C. A. H., Herbert, A. L., Kingsley, D. M., Bellono, N. W.
  2023; 33 (13): R704-R706
- **Sea robins.** *Current biology : CB*
  Allard, C. A., Herbert, A. L., Kingsley, D. M., Bellono, N. W.
  2023; 33 (13): R704-R706
- **Genomic changes underlying repeated niche shifts in an adaptive radiation.** *Evolution; international journal of organic evolution*
  Marques, D. A., Jones, F. C., Palma, F. D., Kingsley, D. M., Reimchen, T. E.
  2022
- **Characterization of mouse Bmp5 regulatory injury element in zebrafish wound models.** *Bone*
  Heller, I. S., Guenther, C. A., Meireles, A. M., Talbot, W. S., Kingsley, D. M.
  2021: 116263
- **Longer or shorter spines: Reciprocal trait evolution in stickleback via triallelic regulatory changes in Stanniocalcin2a.** *Proceedings of the National Academy of Sciences of the United States of America*
  Roberts Kingman, G. A., Lee, D., Jones, F. C., Desmet, D., Bell, M. A., Kingsley, D. M.
  2021; 118 (31)
- **Predicting future from past: The genomic basis of recurrent and rapid stickleback evolution.** *Science advances*
  Roberts Kingman, G. A., Vyas, D. N., Jones, F. C., Brady, S. D., Chen, H. I., Reid, K., Milhaven, M., Bertino, T. S., Aguirre, W. E., Heins, D. C., von Hippel, F. A., Park, P. J., Kirch, et al
  2021; 7 (25)
- **Fitness maps to a large-effect locus in introduced stickleback populations.** *Proceedings of the National Academy of Sciences of the United States of America*
  Schluter, D. n., Marchinko, K. B., Arnegard, M. E., Zhang, H. n., Brady, S. D., Jones, F. C., Bell, M. A., Kingsley, D. M.
  2021; 118 (3)
- **Assembly of the threespine stickleback Y chromosome reveals convergent signatures of sex chromosome evolution.** *Genome biology*
  Peichel, C. L., McCann, S. R., Ross, J. A., Naftaly, A. F., Urton, J. R., Cech, J. N., Grimwood, J. n., Schmutz, J. n., Myers, R. M., Kingsley, D. M., White, M. A.
  2020; 21 (1): 177
- **Predictive covariation among trophic, isotopic, and genomic traits is consistent with intrapopulation diversifying selection** *EVOLUTIONARY ECOLOGY RESEARCH*
  Reimchen, T. E., Frey, S., Brady, S. D., Kingsley, D. M.
  2019; 20 (2): 231–45
- **DNA fragility in the parallel evolution of pelvic reduction in stickleback fish** *SCIENCE*
  Xie, K. T., Wang, G., Thompson, A. C., Wucherpfennig, J. I., Reimchen, T. E., MacColl, A. D. C., Schluter, D., Bell, M. A., Vasquez, K. M., Kingsley, D. M.
  2019; 363 (6422): 81-+
- **Efficient CRISPR-Cas9 editing of major evolutionary loci in sticklebacks** *EVOLUTIONARY ECOLOGY RESEARCH*
  Wucherpfennig, J., Miller, C. T., Kingsley, D. M.
  2019; 20 (1)
- **Efficient CRISPR-Cas9 editing of major evolutionary loci in sticklebacks.** *Evolutionary ecology research*
  Wucherpfennig, J. I., Miller, C. T., Kingsley, D. M.
  2019; 20 (1): 107-132
- **A novel enhancer near the Pitx1 gene influences development and evolution of pelvic appendages in vertebrates.** *eLife*
  Thompson, A. C., Capellini, T. D., Guenther, C. A., Chan, Y. F., Infante, C. R., Menke, D. B., Kingsley, D. M.

2018; 7

- **A novel enhancer near the Pitx1 gene influences development and evolution o pelvic appendages in vertebrates** *ELIFE*
  Thompson, A. C., Capellini, T. D., Guenther, C. A., Chan, Y., Infante, C. R., Menke, D. B., Kingsley, D. M.
  2018; 7
- **Characterization of a Human-Specific Tandem Repeat Associated with Bipolar Disorder and Schizophrenia** *AMERICAN JOURNAL OF HUMAN GENETICS*
  Song, J. H. T., Lowe, C. B., Kingsley, D. M.
  2018; 103 (3): 421-430
- **Detecting differential copy number variation between groups of samples.** *Genome research*
  Lowe, C. B., Sanchez-Luege, N. n., Howes, T. R., Brady, S. D., Daugherty, R. R., Jones, F. C., Bell, M. A., Kingsley, D. M.
  2018; 28 (2): 256–65
- **Experimental evidence for rapid genomic adaptation to a new niche in an adaptive radiation.** *Nature ecology & evolution*
  Marques, D. A., Jones, F. C., Di Palma, F. n., Kingsley, D. M., Reimchen, T. E.
  2018; 2 (7): 1128–38
- **Genomic dissection of conserved transcriptional regulation in intestinal epithelial cells.** *PLoS biology*
  Lickwar, C. R., Camp, J. G., Weiser, M., Cocchiaro, J. L., Kingsley, D. M., Furey, T. S., Sheikh, S. Z., Rawls, J. F.
  2017; 15 (8): e2002054
- **Convergent evolution of SWS2 opsin facilitates adaptive radiation of threespine stickleback into different light environments** *PLOS BIOLOGY*
  Marques, D. A., Taylor, J. S., Jones, F. C., Di Palma, F., Kingsley, D. M., Reimchen, T. E.
  2017; 15 (4)
- **Dorsal spine evolution in threespine sticklebacks via a splicing change in MSX2A.** *BMC biology*
  Howes, T. R., Summers, B. R., Kingsley, D. M.
  2017; 15 (1): 115
- **Genetic Coupling of Female Mate Choice with Polygenic Ecological Divergence Facilitates Stickleback Speciation.** *Current biology : CB*
  Bay, R. A., Arnegard, M. E., Conte, G. L., Best, J. n., Bedford, N. L., McCann, S. R., Dubin, M. E., Chan, Y. F., Jones, F. C., Kingsley, D. M., Schluter, D. n., Peichel, C. L.
  2017; 27 (21): 3344–49.e4
- **Beautiful Piles of Bones: An Interview with 2017 Genetics Society of America Medal Recipient David M. Kingsley.** *Genetics*
  Kingsley, D. M.
  2017; 207 (4): 1221–22
- **An Unexpectedly Complex Architecture for Skin Pigmentation in Africans.** *Cell*
  Martin, A. R., Lin, M. n., Granka, J. M., Myrick, J. W., Liu, X. n., Sockell, A. n., Atkinson, E. G., Werely, C. J., Möller, M. n., Sandhu, M. S., Kingsley, D. M., Hoal, E. G., Liu, et al
  2017; 171 (6): 1340–53.e14
- **Heads, Shoulders, Elbows, Knees, and Toes: Modular Gdf5 Enhancers Control Different Joints in the Vertebrate Skeleton** *PLOS GENETICS*
  Chen, H., Capellini, T. D., Schoor, M., Mortlock, D. P., Reddi, A. H., Kingsley, D. M.
  2016; 12 (11)
- **Evolving New Skeletal Traits by cis-Regulatory Changes in Bone Morphogenetic Proteins.** *Cell*
  Indjeian, V. B., Kingman, G. A., Jones, F. C., Guenther, C. A., Grimwood, J., Schmutz, J., Myers, R. M., Kingsley, D. M.
  2016; 164 (1-2): 45-56
- **Extent of QTL Reuse During Repeated Phenotypic Divergence of Sympatric Threespine Stickleback** *GENETICS*
  Conte, G. L., Arnegard, M. E., Best, J., Chan, Y. F., Jones, F. C., Kingsley, D. M., Schluter, D., Peichel, C. L.
  2015; 201 (3): 1189-U730
- **A distinct regulatory region of the Bmp5 locus activates gene expression following adult bone fracture or soft tissue injury.** *Bone*
  Guenther, C. A., Wang, Z., Li, E., Tran, M. C., Logan, C. Y., Nusse, R., Pantalena-Filho, L., Yang, G. P., Kingsley, D. M.
  2015; 77: 31-41

- **A recurrent regulatory change underlying altered expression and Wnt response of the stickleback armor plates gene EDA** *ELIFE*
  O'Brown, N. M., Summers, B. R., Jones, F. C., Brady, S. D., Kingsley, D. M.
  2015; 4
- **Mesenchymal cells. Defining a mesenchymal progenitor niche at single-cell resolution.** *Science*
  Kumar, M. E., Bogard, P. E., Espinoza, F. H., Menke, D. B., Kingsley, D. M., Krasnow, M. A.
  2014; 346 (6211)
- **The phosphate exporter xpr1b is required for differentiation of tissue-resident macrophages.** *Cell reports*
  Meireles, A. M., Shiau, C. E., Guenther, C. A., Sidik, H., Kingsley, D. M., Talbot, W. S.
  2014; 8 (6): 1659-1667
- **Evolved tooth gain in sticklebacks is associated with a cis-regulatory allele of Bmp6.** *Proceedings of the National Academy of Sciences of the United States of America*
  Cleves, P. A., Ellis, N. A., Jimenez, M. T., Nunez, S. M., Schluter, D., Kingsley, D. M., Miller, C. T.
  2014; 111 (38): 13912-13917
- **Genetics of ecological divergence during speciation.** *Nature*
  Arnegard, M. E., Mcgee, M. D., Matthews, B., Marchinko, K. B., Conte, G. L., Kabir, S., Bedford, N., Bergek, S., Chan, Y. F., Jones, F. C., Kingsley, D. M., Peichel, C. L., Schluter, et al
  2014; 511 (7509): 307-311
- **Efficient Imputation of Missing Markers in Low-Coverage Genotyping-by-Sequencing Data from Multiparental Crosses** *GENETICS*
  Miller, C. T., Glazer, A. M., Summers, B. R., Blackman, B. K., Norman, A. R., Shapiro, M. D., Cole, B. L., Peichel, C. L., Schluter, D., Kingsley, D. M.
  2014; 197 (1): 405-?
- **A recurrent regulatory change underlying altered expression and Wnt response of the stickleback armor plates gene EDA.** *eLife*
  O'Brown, N. M., Summers, B. R., Jones, F. C., Brady, S. D., Kingsley, D. M.
  2014; 4
- **Phylogeography and adaptation genetics of stickleback from the Haida Gwaii archipelago revealed using genome-wide single nucleotide polymorphism genotyping** *MOLECULAR ECOLOGY*
  Deagle, B. E., Jones, F. C., Absher, D. M., Kingsley, D. M., Reimchen, T. E.
  2013; 22 (7): 1917-1932
- **Pitx1 broadly associates with limb enhancers and is enriched on hindlimb cis-regulatory elements** *DEVELOPMENTAL BIOLOGY*
  Infante, C. R., Park, S., Mihala, A. G., Kingsley, D. M., Menke, D. B.
  2013; 374 (1): 234-244
- **A penile spine/vibrissa enhancer sequence is missing in modern and extinct humans but is retained in multiple primates with penile spines and sensory vibrissae.** *PloS one*
  Reno, P. L., McLean, C. Y., Hines, J. E., Capellini, T. D., Bejerano, G., Kingsley, D. M.
  2013; 8 (12)
- **A "Forward Genomics" Approach Links Genotype to Phenotype using Independent Phenotypic Losses among Related Species** *CELL REPORTS*
  Hiller, M., Schaar, B. T., Indjeian, V. B., Kingsley, D. M., Hagey, L. R., Bejerano, G.
  2012; 2 (4): 817-823
- **Genetic Architecture of Variation in the Lateral Line Sensory System of Threespine Sticklebacks** *G3-GENES GENOMES GENETICS*
  Wark, A. R., Mills, M. G., Dang, L., Chan, Y. F., Jones, F. C., Brady, S. D., Absher, D. M., Grimwood, J., Schmutz, J., Myers, R. M., Kingsley, D. M., Peichel, C. L.
  2012; 2 (9): 1047-1056
- **GENETIC SIGNATURE OF ADAPTIVE PEAK SHIFT IN THREESPINE STICKLEBACK** *EVOLUTION*
  Rogers, S. M., Tamkee, P., Summers, B., Balabahadra, S., Marks, M., Kingsley, D. M., Schluter, D.
  2012; 66 (8): 2439-2450
- **Population genomics of parallel phenotypic evolution in stickleback across stream-lake ecological transitions** *PROCEEDINGS OF THE ROYAL SOCIETY B-BIOLOGICAL SCIENCES*
  Deagle, B. E., Jones, F. C., Chan, Y. F., Absher, D. M., Kingsley, D. M., Reimchen, T. E.

2012; 279 (1732): 1277-1286

- **The genomic basis of adaptive evolution in threespine sticklebacks** *NATURE*

  Jones, F. C., Grabherr, M. G., Chan, Y. F., Russell, P., Mauceli, E., Johnson, J., Swofford, R., Pirun, M., Zody, M. C., White, S., Birney, E., Searle, S., Schmutz, et al

  2012; 484 (7392): 55-61

- **A Genome-wide SNP Genotyping Array Reveals Patterns of Global and Repeated Species-Pair Divergence in Sticklebacks** *CURRENT BIOLOGY*

  Jones, F. C., Chan, Y. F., Schmutz, J., Grimwood, J., Brady, S. D., Southwick, A. M., Absher, D. M., Myers, R. M., Reimchen, T. E., Deagle, B. E., Schluter, D., Kingsley, D. M.

  2012; 22 (1): 83-90

- **Three Periods of Regulatory Innovation During Vertebrate Evolution** *SCIENCE*

  Lowe, C. B., Kellis, M., Siepel, A., Raney, B. J., Clamp, M., Salama, S. R., Kingsley, D. M., Lindblad-Toh, K., Haussler, D.

  2011; 333 (6045): 1019-1024

- **The genetic basis of divergent pigment patterns in juvenile threespine sticklebacks** *HEREDITY*

  Greenwood, A. K., Jones, F. C., Chan, Y. F., Brady, S. D., Absher, D. M., Grimwood, J., Schmutz, J., Myers, R. M., KINGSLEY, D. M., Peichel, C. L.

  2011; 107 (2): 155-166

- **The Progressive Ankylosis Protein Regulates Cementum Apposition and Extracellular Matrix Composition** *CELLS TISSUES ORGANS*

  Foster, B. L., Nagatomo, K. J., Bamashmous, S. O., Tompkins, K. A., Fong, H., Dunn, D., Chu, E. Y., Guenther, C., KINGSLEY, D. M., Rutherford, R. B., Somerman, M. J.

  2011; 194 (5): 382-405

- **Human-specific loss of an androgen receptor enhancer is associated with the loss of vibrissae and penile spines** *80th Annual Meeting of the American-Association-of-Physical-Anthropologists*

  Reno, P. L., McLean, C. Y., Pollen, A. A., Bejerano, G., Kingsley, D. M.

  WILEY-BLACKWELL.2011: 252–252

- **Synovial joint morphogenesis requires the chondrogenic action of Sox5 and Sox6 in growth plate and articular cartilage** *DEVELOPMENTAL BIOLOGY*

  Dy, P., Smits, P., Silvester, A., Penzo-Mendez, A., Dumitriu, B., Han, Y., de la Motte, C. A., Kingsley, D. M., Lefebvre, V.

  2010; 341 (2): 346-359

- **Adaptive Evolution of Pelvic Reduction in Sticklebacks by Recurrent Deletion of a Pitx1 Enhancer** *SCIENCE*

  Chan, Y. F., Marks, M. E., Jones, F. C., Villarreal, G., Shapiro, M. D., Brady, S. D., Southwick, A. M., Absher, D. M., Grimwood, J., Schmutz, J., Myers, R. M., Petrov, D., Jonsson, et al

  2010; 327 (5963): 302-305

- **Genome 10K: A Proposal to Obtain Whole-Genome Sequence for 10 000 Vertebrate Species** *JOURNAL OF HEREDITY*

  Haussler, D., O'Brien, S. J., Ryder, O. A., Barker, F. K., Clamp, M., Crawford, A. J., Hanner, R., Hanotte, O., Johnson, W. E., McGuire, J. A., Miller, W., Murphy, R. W., Murphy, et al

  2009; 100 (6): 659-674

- **A role for a neo-sex chromosome in stickleback speciation** *NATURE*

  Kitano, J., Ross, J. A., Mori, S., Kume, M., Jones, F. C., Chan, Y. F., Absher, D. M., Grimwood, J., Schmutz, J., Myers, R. M., Kingsley, D. M., Peichel, C. L.

  2009; 461 (7267): 1079-1083

- **The Genetic Architecture of Skeletal Convergence and Sex Determination in Ninespine Sticklebacks** *CURRENT BIOLOGY*

  Shapiro, M. D., Summers, B. R., Balabhadra, S., Aldenhoven, J. T., Miller, A. L., Cunningham, C. B., Bell, M. A., Kingsley, D. M.

  2009; 19 (13): 1140-1145

- **Muscle Contraction Is Necessary to Maintain Joint Progenitor Cell Fate** *DEVELOPMENTAL CELL*

  Kahn, J., Shwartz, Y., Blitz, E., Krief, S., Sharir, A., Breitel, D. A., Rattenbach, R., Relaix, F., Maire, P., Rountree, R. B., Kingsley, D. M., Zelzer, E.

  2009; 16 (5): 734-743

- **From Atoms to Traits** *SCIENTIFIC AMERICAN*

  Kingsley, D. M.

2009; 300 (1): 52-59

- **Shaping Skeletal Growth by Modular Regulatory Elements in the Bmp5 Gene** *PLOS GENETICS*
  Guenther, C., Pantalena-Filho, L., Kingsley, D. M.
  2008; 4 (12)

- **Dual hindlimb control elements in the Tbx4 gene and region-specific control of bone size in vertebrate limbs** *DEVELOPMENT*
  Menke, D. B., Guenther, C., Kingsley, D. M.
  2008; 135 (15): 2543-2553

- **Dominant negative Bmp5 mutation reveals key role of BMPs in skeletal response to mechanical stimulation** *BMC DEVELOPMENTAL BIOLOGY*
  Ho, A. M., Marker, P. C., Peng, H., Quintero, A. J., Kingsley, D. M., Huard, J.
  2008; 8

- **A distinct cohort of progenitor cells participates in synovial Joint and articular cartilage formation during mouse limb skeletogenesis** *DEVELOPMENTAL BIOLOGY*
  Koyama, E., Shibukawa, Y., Nagayama, M., Sugito, H., Young, B., Yuasa, T., Okabe, T., Ochiai, T., Kamiya, N., Rountree, R. B., Kingsley, D. M., Iwamoto, M., Enomoto-Iwamoto, et al
  2008; 316 (1): 62-73

- **The genetics of adaptive shape shift in stickleback: Pleiotropy and effect size** *EVOLUTION*
  Albert, A. Y., Sawaya, S., Vines, T. H., Knecht, A. K., Miller, C. T., Summers, B. R., Balabhadra, S., Kingsley, D. M., Schluter, D.
  2008; 62 (1): 76-85

- **cis-regulatory changes in kit ligand expression and parallel evolution of pigmentation in sticklebacks and humans** *CELL*
  Miller, C. T., Beleza, S., Pollen, A. A., Schluter, D., Kittles, R. A., Shriver, M. D., Kingsley, D. M.
  2007; 131 (6): 1179-1189

- **Over-expression of BMP4 and BMP5 in a child with axial skeletal malformations and heterotopic ossification: A new syndrome** *AMERICAN JOURNAL OF MEDICAL GENETICS PART A*
  Feldman, G. J., Billings, P. C., Patel, R. V., Caron, R. J., Guenther, C., Kingsley, D. M., Kaplan, F. S., Shore, E. M.
  2007; 143A (7): 699-706

- **Constraints on utilization of the EDA-signaling pathway in threespine stickleback evolution** *EVOLUTION & DEVELOPMENT*
  Knecht, A. K., Hosemann, K. E., Kingsley, D. M.
  2007; 9 (2): 141-154

- **Synovial joint formation during mouse limb skeletogenesis - Roles of Indian hedgehog signaling** *2nd Conference on Skeletal Biology and Medicine*
  Koyama, E., Ochiai, T., Rountree, R. B., Kingsley, D. M., Enomoto-Iwamoto, M., Iwamoto, M., Pacifici, M.
  BLACKWELL PUBLISHING.2007: 100–112

- **Biochemical and genetic analysis of ANK in arthritis and bone disease** *AMERICAN JOURNAL OF HUMAN GENETICS*
  Gurley, K. A., Reimer, R. J., Kingsley, D. M.
  2006; 79 (6): 1017-1029

- **Parallel genetic origins of pelvic reduction in vertebrates** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Shapiro, M. D., Bell, M. A., Kingsley, D. M.
  2006; 103 (37): 13753-13758

- **Mineral formation in joints caused by complete or joint-specific loss of ANK function** *JOURNAL OF BONE AND MINERAL RESEARCH*
  Gurley, K. A., Chen, H., Guenther, C., Nguyen, E. T., Rountree, R. B., Schoor, M., Kingsley, D. M.
  2006; 21 (8): 1238-1247

- **Detection of potential GDF6 regulatory elements by multispecies sequence comparisons and identification of a skeletal joint enhancer** *GENOMICS*
  Portnoy, M. E., McDermott, K. J., Antonellis, A., Margulies, E. H., Prasad, A. B., KINGSLEY, D. M., Green, E. D., Mortlock, D. P.
  2005; 86 (3): 295-305

- **Widespread parallel evolution in sticklebacks by repeated fixation of ectodysplasin alleles** *SCIENCE*

  Colosimo, P. F., Hosemann, K. E., Balabhadra, S., Villarreal, G., Dickson, M., Grimwood, J., Schmutz, J., Myers, R. M., Schluter, D., KINGSLEY, D. M.

  2005; 307 (5717): 1928-1933

- **A simple and efficient microinjection protocol for making transgenic sticklebacks** *4th International Conference on Stickleback Behaviour and Evolution*

  Hosemann, K. E., Colosimo, P. E., Summers, B. R., Kingsley, D. M.

  BRILL ACADEMIC PUBLISHERS.2004: 1345–1355

- **New genomic tools for molecular studies of evolutionary change in threespine sticklebacks** *4th International Conference on Stickleback Behaviour and Evolution*

  Kingsley, D. M., Zhu, B. L., Osoegawa, K., de Jong, P. J., Schein, J., Marra, M., Peichel, C., Amamiya, C., Schluter, D., Balabhadra, S., Friedlander, B., Cha, Y. M., Dickson, et al

  BRILL ACADEMIC PUBLISHERS.2004: 1331–1344

- **BMP receptor signaling is required for postnatal maintenance of articular cartilage** *PLOS BIOLOGY*

  Rountree, R. B., Schoor, M., Chen, H., Marks, M. E., Harley, V., Mishina, Y., Kingsley, D. M.

  2004; 2 (11): 1815-1827

- **The master sex-determination locus in threespine sticklebacks is on a nascent Y chromosome** *CURRENT BIOLOGY*

  Peichel, C. L., Ross, J. A., Matson, C. K., Dickson, M., Grimwood, J., Schmutz, J., Myers, R. M., Mori, S., Schluter, D., KINGSLEY, D. M.

  2004; 14 (16): 1416-1424

- **Evidence for ecology's role in speciation** *NATURE*

  McKinnon, J. S., Mori, S., Blackman, B. K., David, L., KINGSLEY, D. M., Jamieson, L., Chou, J., Schluter, D.

  2004; 429 (6989): 294-298

- **The genetic architecture of parallel armor plate reduction in threespine sticklebacks** *PLOS BIOLOGY*

  Colosimo, P. F., Peichel, C. L., Nereng, K., Blackman, B. K., Shapiro, M. D., Schluter, D., Kingsley, D. M.

  2004; 2 (5): 635-641

- **The genetic architecture of parallel armor plate reduction in threespine sticklebacks.** *PLoS biology*

  Colosimo, P. F., Peichel, C. L., Nereng, K., Blackman, B. K., Shapiro, M. D., Schluter, D., Kingsley, D. M.

  2004; 2 (5): E109-?

- **Genetic and developmental basis of evolutionary pelvic reduction in threespine sticklebacks** *NATURE*

  Shapiro, M. D., Marks, M. E., Peichel, C. L., Blackman, B. K., Nereng, K. S., Jonsson, B., Schluter, D., Kingsley, D. M.

  2004; 428 (6984): 717-723

- **A general approach for identifying distant regulatory elements applied to the Gdf6 gene** *GENOME RESEARCH*

  Mortlock, D. P., Guenther, C., Kingsley, D. M.

  2003; 13 (9): 2069-2081

- **Multiple joint and skeletal patterning defects caused by single and double mutations in the mouse Gdf6 and Gdf5 genes** *DEVELOPMENTAL BIOLOGY*

  Settle, S. H., Rountree, R. B., Sinha, A., Thacker, A., Higgins, K., KINGSLEY, D. M.

  2003; 254 (1): 116-130

- **Cementum: A phosphate-sensitive tissue** *JOURNAL OF DENTAL RESEARCH*

  Nociti, F. H., Berry, J. E., Foster, B. L., Gurley, K. A., KINGSLEY, D. M., Takata, T., Miyauchi, M., Somerman, M. J.

  2002; 81 (12): 817-821

- **Mutations in ANKH cause chondrocalcinosis** *AMERICAN JOURNAL OF HUMAN GENETICS*

  Pendleton, A., Johnson, M. D., Hughes, A., Gurley, K. A., Ho, A. M., Doherty, M., Dixey, J., Gillet, P., Loeuille, D., McGrath, R., REGINATO, A., Shiang, R., Wright, et al

  2002; 71 (4): 933-940

- **Dysregulated expression of BMP5 in a patient with deformed helices, axial skeletal defects, and heterotopic ossification: A clue from the short-ear mouse.** *24th Annual Meeting of the American-Society-for-Bone-and-Mineral-Research*

  FELDMAN, G. J., Patel, R., Billings, P. C., KINGSLEY, D. M., Shore, E. M., Kaplan, F. S.

WILEY-BLACKWELL.2002: S499–S499

- **The genetic architecture of divergence between threespine stickleback species** *NATURE*
  Peichel, C. L., Nereng, K. S., Ohgi, K. A., Cole, B. L., Colosimo, P. F., Buerkle, C. A., Schluter, D., Kingsley, D. M.
  2001; 414 (6866): 901-905
- **Reciprocal mouse and human limb phenotypes caused by gain- and loss-of-function mutations affecting Lmbr1** *GENETICS*
  Clark, R. M., Marker, P. C., ROESSLER, E., Dutra, A., Schimenti, J. C., Muenke, M., Kingsley, D. M.
  2001; 159 (2): 715-726
- **The BMP family member Gdf7 is required for seminal vesicle growth, branching morphogenesis, and cytodifferentiation** *DEVELOPMENTAL BIOLOGY*
  Settle, S., Marker, P., Gurley, K., Sinha, A., Thacker, A., Wang, Y. Z., Higgins, K., Cunha, G., Kingsley, D. M.
  2001; 234 (1): 138-150
- **A large-scale in situ screen provides molecular evidence for the induction of eye anterior segment structures by the developing lens** *DEVELOPMENTAL BIOLOGY*
  Thut, C. J., Rountree, R. B., Hwa, M., KINGSLEY, D. M.
  2001; 231 (1): 63-76
- **Sequence interpretation - Functional annotation of mouse genome sequences** *SCIENCE*
  Nadeau, J. H., Balling, R., Barsh, G., Beier, D., Brown, S. D., Bucan, M., Camper, S., Carlson, G., Copeland, N., Eppig, J., Fletcher, C., Frankel, W. N., Ganten, et al
  2001; 291 (5507): 1251-?
- **Genetic control of bone and joint formation.** *Novartis Foundation symposium*
  KINGSLEY, D. M.
  2001; 232: 213-222
- **Role of the mouse ank gene in control of tissue calcification and arthritis** *SCIENCE*
  Ho, A. M., Johnson, M. D., Kingsley, D. M.
  2000; 289 (5477): 265-270
- **A novel candidate gene for mouse and human preaxial polydactyly with altered expression in limbs of Hemimelic extra-toes mutant mice** *GENOMICS*
  Clark, R. M., Marker, P. C., KINGSLEY, D. M.
  2000; 67 (1): 19-27
- **Efficient studies of long-distance Bmp5 gene regulation using bacterial artificial chromosomes** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  DiLeone, R. J., Marcus, G. A., Johnson, M. D., KINGSLEY, D. M.
  2000; 97 (4): 1612-1617
- **GDF5 coordinates bone and joint formation during digit development** *DEVELOPMENTAL BIOLOGY*
  Storm, E. E., KINGSLEY, D. M.
  1999; 209 (1): 11-27
- **An extensive 3 ' regulatory region controls expression of Bmp5 in specific anatomical structures of the mouse embryo** *GENETICS*
  DiLeone, R. J., Russell, L. B., Kingsley, D. M.
  1998; 148 (1): 401-408
- **Bone morphogenetic proteins in the formation and repair of cartilage, bone, and joints** *Workshop on Skeletal Growth and Development - Clinical Issues and Basic Science Advances*
  KINGSLEY, D. M.
  AMER ACAD ORTHOPAEDIC SURGEONS.1998: 87–98
- **The Bmp8 gene is expressed in developing skeletal tissue and maps near the Achondroplasia locus on mouse chromosome 4** *GENOMICS*
  DiLeone, R. J., King, J. A., Storm, E. E., Copeland, N. G., Jenkins, N. A., KINGSLEY, D. M.
  1997; 40 (1): 196-198
- **Spectrum of Bmp5 mutations from germline mutagenesis experiments in mice** *GENETICS*

Marker, P. C., Seung, K. J., Bland, A. E., Russell, L. B., KINGSLEY, D. M.
1997; 145 (2): 435-443

- **Joint patterning defects caused by single and double mutations in members of the bone morphogenetic protein (BMP) family** *DEVELOPMENT*
  Storm, E. E., KINGSLEY, D. M.
  1996; 122 (12): 3969-3979
- **Mechanical and geometric changes in the growing femora of BMP-5 deficient mice** *BONE*
  Mikic, B., VANDERMEULEN, M. C., KINGSLEY, D. M., Carter, D. R.
  1996; 18 (6): 601-607
- **The role of BMPs and GDFs in development of region-specific skeletal structures** *Conference on Molecular and Developmental Biology of Cartilage*
  King, J. A., Storm, E. E., Marker, P. C., DiLeone, R. J., KINGSLEY, D. M.
  NEW YORK ACAD SCIENCES.1996: 70–79
- **THE MOUSE SNELLS WALTZER DEAFNESS GENE ENCODES AN UNCONVENTIONAL MYOSIN REQUIRED FOR STRUCTURAL INTEGRITY OF INNER-EAR HAIR-CELLS** *NATURE GENETICS*
  Avraham, K. B., Hasson, T., STEEL, K. P., KINGSLEY, D. M., Russell, L. B., Mooseker, M. S., Copeland, N. G., Jenkins, N. A.
  1995; 11 (4): 369-375
- **CHROMOSOMAL LOCALIZATION, EMBRYONIC EXPRESSION, AND IMPRINTING TESTS FOR BMP7 ON DISTAL MOUSE CHROMOSOME-2** *GENOMICS*
  Marker, P. C., King, J. A., Copeland, N. G., Jenkins, N. A., KINGSLEY, D. M.
  1995; 28 (3): 576-580
- **LONG-BONE GEOMETRY AND STRENGTH IN ADULT BMP-5 DEFICIENT MICE** *BONE*
  Mikic, B., VANDERMEULEN, M. C., KINGSLEY, D. M., Carter, D. R.
  1995; 16 (4): 445-454
- **BMP5 AND THE MOLECULAR, SKELETAL, AND SOFT-TISSUE ALTERATIONS IN SHORT EAR MICE** *DEVELOPMENTAL BIOLOGY*
  King, J. A., Marker, P. C., Seung, K. J., KINGSLEY, D. M.
  1994; 166 (1): 112-122
- **LIMB ALTERATIONS IN BRACHYPODISM MICE DUE TO MUTATIONS IN A NEW MEMBER OF THE TGF-BETA-SUPERFAMILY** *NATURE*
  Storm, E. E., Huynh, T. V., Copeland, N. G., Jenkins, N. A., KINGSLEY, D. M., Lee, S. J.
  1994; 368 (6472): 639-643
- **THE TGF-BETA SUPERFAMILY - NEW MEMBERS, NEW RECEPTORS, AND NEW GENETIC TESTS OF FUNCTION IN DIFFERENT ORGANISMS** *GENES & DEVELOPMENT*
  KINGSLEY, D. M.
  1994; 8 (2): 133-146
- **MOUSE CHROMOSOME-9** *MAMMALIAN GENOME*
  Imai, K., KINGSLEY, D. M.
  1994; 5: S139-S153
- **WHAT DO BMPS DO IN MAMMALS - CLUES FROM THE MOUSE SHORT-EAR MUTATION** *TRENDS IN GENETICS*
  KINGSLEY, D. M.
  1994; 10 (1): 16-21
- **Encyclopedia of the mouse genome III. October 1993. Mouse chromosome 9.** *Mammalian genome*
  KINGSLEY, D. M.
  1993; 4: S136-53
- **MOUSE CHROMOSOME-9** *MAMMALIAN GENOME*
  KINGSLEY, D. M.
  1993; 4: S136-S153

- **THE MOUSE SHORT-EAR SKELETAL MORPHOGENESIS LOCUS IS ASSOCIATED WITH DEFECTS IN A BONE MORPHOGENETIC MEMBER OF THE TGF-BETA SUPERFAMILY** *CELL*
  KINGSLEY, D. M., Bland, A. E., Grubber, J. M., Marker, P. C., Russell, L. B., Copeland, N. G., Jenkins, N. A.
  1992; 71 (3): 399-410
- **MOUSE CHROMOSOME-9** *6TH INTERNATIONAL WORKSHOP ON MOUSE GENOME MAPPING*
  KINGSLEY, D. M.
  SPRINGER VERLAG.1992: S136–S152
- **Mouse chromosome 9.** *Mammalian genome*
  KINGSLEY, D. M.
  1991; 1: S127-45
- **CHROMOSOMAL LOCATION OF MURINE AND HUMAN IL-1 RECEPTOR GENES** *GENOMICS*
  Copeland, N. G., SILAN, C. M., KINGSLEY, D. M., Jenkins, N. A., Cannizzaro, L. A., Croce, C. M., Huebner, K., Sims, J. E.
  1991; 9 (1): 44-50
- **AN ANCIENT, HIGHLY CONSERVED FAMILY OF CYSTEINE-RICH PROTEIN DOMAINS REVEALED BY CLONING TYPE-I AND TYPE-II MURINE MACROPHAGE SCAVENGER RECEPTORS** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Freeman, M., Ashkenas, J., Rees, D. J., KINGSLEY, D. M., Copeland, N. G., Jenkins, N. A., Krieger, M.
  1990; 87 (22): 8810-8814
- **AN INTERSPECIFIC BACKCROSS LINKAGE MAP OF THE PROXIMAL HALF OF MOUSE CHROMOSOME-14** *GENOMICS*
  CECI, J. D., KINGSLEY, D. M., SILAN, C. M., Copeland, N. G., Jenkins, N. A.
  1990; 6 (4): 673-678
- **CHROMOSOMAL LOCALIZATION OF 7 MEMBERS OF THE MURINE TGF-BETA SUPERFAMILY SUGGESTS CLOSE LINKAGE TO SEVERAL MORPHOGENETIC MUTANT LOCI** *GENOMICS*
  Dickinson, M. E., KOBRIN, M. S., SILAN, C. M., KINGSLEY, D. M., JUSTICE, M. J., MILLER, D. A., CECI, J. D., LOCK, L. F., Lee, A., BUCHBERG, A. M., SIRACUSA, L. D., LYONS, K. M., DERYNCK, et al
  1990; 6 (3): 505-520
- **Chromosomal localization of seven members of the murine TGF-beta superfamily suggests close linkage to several morphogenetic mutant loci.** *Genomics*
  Dickinson, M. E., KOBRIN, M. S., SILAN, C. M., KINGSLEY, D. M., JUSTICE, M. J., MILLER, D. A., CECI, J. D., LOCK, L. F., Lee, A., BUCHBERG, A. M.
  1990; 6 (3): 505-520
- **GENETIC ABLATION OF A MOUSE GENE EXPRESSED SPECIFICALLY IN BRAIN** *EMBO JOURNAL*
  KINGSLEY, D. M., Rinchik, E. M., Russell, L. B., Ottiger, H. P., Sutcliffe, J. G., Copeland, N. G., Jenkins, N. A.
  1990; 9 (2): 395-399
- **A MOLECULAR GENETIC-LINKAGE MAP OF MOUSE CHROMOSOME-9 WITH REGIONAL LOCALIZATIONS FOR THE GSTA, T3G, ETS-1 AND LDLR LOCI** *GENETICS*
  KINGSLEY, D. M., Jenkins, N. A., Copeland, N. G.
  1989; 123 (1): 165-172
- **IDENTIFICATION OF 2 MURINE LOCI HOMOLOGOUS TO THE V-CBL ONCOGENE** *JOURNAL OF VIROLOGY*
  REGNIER, D. C., Kozak, C. A., KINGSLEY, D. M., Jenkins, N. A., Copeland, N. G., Langdon, W. Y., Morse, H. C.
  1989; 63 (9): 3678-3682
- **A RETROVIRAL INSERTION IN THE DILUTE (D) LOCUS PROVIDES MOLECULAR ACCESS TO THIS REGION OF MOUSE CHROMOSOME-9** *PROGRESS IN NUCLEIC ACID RESEARCH AND MOLECULAR BIOLOGY*
  Jenkins, N. A., Strobel, M. C., SEPERACK, P. K., KINGSLEY, D. M., Moore, K. J., Mercer, J. A., Russell, L. B., Copeland, N. G.
  1989; 36: 207-220
- **ANALYSIS OF THE SYNTHESIS, INTRACELLULAR SORTING, AND FUNCTION OF GLYCOPROTEINS USING A MAMMALIAN-CELL MUTANT WITH REVERSIBLE GLYCOSYLATION DEFECTS** *METHODS IN CELL BIOLOGY*
  Krieger, M., Reddy, P., Kozarsky, K., Kingsley, D., Hobbie, L., Penman, M.
  1989; 32: 57-84

- **USE OF A MUTANT-CELL LINE TO STUDY THE KINETICS AND FUNCTION OF O-LINKED GLYCOSYLATION OF LOW-DENSITY LIPOPROTEIN RECEPTORS** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*

  Kozarsky, K., Kingsley, D., Krieger, M.

  1988; 85 (12): 4335-4339

- **RESTORATION OF LDL RECEPTOR ACTIVITY IN MUTANT-CELLS BY INTERCELLULAR JUNCTIONAL COMMUNICATION** *SCIENCE*

  Hobbie, L., KINGSLEY, D. M., Kozarsky, K. F., Jackman, R. W., Krieger, M.

  1987; 235 (4784): 69-73

- **3 TYPES OF LOW-DENSITY-LIPOPROTEIN RECEPTOR-DEFICIENT MUTANT HAVE PLEIOTROPIC DEFECTS IN THE SYNTHESIS OF N-LINKED, O-LINKED, AND LIPID-LINKED CARBOHYDRATE CHAINS** *JOURNAL OF CELL BIOLOGY*

  KINGSLEY, D. M., Kozarsky, K. F., Segal, M., Krieger, M.

  1986; 102 (5): 1576-1585

- **REVERSIBLE DEFECTS IN O-LINKED GLYCOSYLATION AND LDL RECEPTOR EXPRESSION IN A UDP-GAL/UDP-GAINAC 4-EPIMERASE DEFICIENT MUTANT** *CELL*

  KINGSLEY, D. M., Kozarsky, K. F., Hobbie, L., Krieger, M.

  1986; 44 (5): 749-759

- **GENETIC-ANALYSIS OF RECEPTOR-MEDIATED ENDOCYTOSIS** *TRENDS IN BIOCHEMICAL SCIENCES*

  Krieger, M., Kingsley, D., Sege, R., Hobbie, L., Kozarsky, K.

  1985; 10 (11): 447-452

- **RECEPTOR-MEDIATED ENDOCYTOSIS OF LOW-DENSITY LIPOPROTEIN - SOMATIC-CELL MUTANTS DEFINE MULTIPLE GENES REQUIRED FOR EXPRESSION OF SURFACE-RECEPTOR ACTIVITY** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA-BIOLOGICAL SCIENCES*

  KINGSLEY, D. M., Krieger, M.

  1984; 81 (17): 5454-5458

- **AMPHOTERICIN-B SELECTION OF MUTANT CHINESE-HAMSTER CELLS WITH DEFECTS IN THE RECEPTOR-MEDIATED ENDOCYTOSIS OF LOW-DENSITY LIPOPROTEIN AND CHOLESTEROL-BIOSYNTHESIS** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA-BIOLOGICAL SCIENCES*

  Krieger, M., Martin, J., Segal, M., Kingsley, D.

  1983; 80 (18): 5607-5611