

## CURRICULUM VITAE

*Name:* Chris Tsuyoshi Amemiya

*Date of Birth:* December 21, 1959

*Place of Birth:* Wahiawa, Hawaii

*Nationality:* U.S.A.

*Education:* B.S. (Genetics), 1981, Purdue University, West Lafayette, IN  
Ph.D. (Genetics), 1987, Texas A&M University, College Station, TX (John Gold, Ph.D., supervisor)

### *Positions and Appointments:*

- 1980-81 Undergraduate Lab Assistant, Cytogenetics Laboratory, Purdue University, West Lafayette, IN
- 1981-85 Teaching Assistant, Introductory Genetics, Texas A&M University, College Station, TX
- 1986 Research Assistant, Texas A&M University, College Station, TX
- 1987-90 Postdoctoral Fellow, Tampa Bay Research Institute (formerly Showa University Research Institute), St. Petersburg, FL (Gary Litman, Ph.D., supervisor)
- 1990-93 Postdoctoral Fellow, Biomedical Sciences Division, Lawrence Livermore National Laboratory, Livermore, CA 94551 (Peter De Jong, Ph.D., supervisor)
- 1993 Visiting Scientist, Molecular Genetics Laboratory (Pediatrics), All Children's Hospital, St. Petersburg, FL
- 1993 Visiting Scientist, Human Genetics Department, Roswell Park Cancer Institute, Buffalo, NY
- 1993-97 Assistant Professor of Human Genetics and Pediatrics, Center for Human Genetics, Boston University School of Medicine, Boston, MA
- 1997-2001 Associate Professor of Human Genetics and Pediatrics, Center for Human Genetics, Boston University School of Medicine, Boston, MA
- 1998-2001 Director of Developmental Genetics, Center for Human Genetics, Boston University School of Medicine, Boston, MA
- 1999-2001 Joint appointment (Associate Professor), Department of Microbiology and the Immunology Training Program, Boston University School of Medicine, MA
- 2001-2003 Associate Member, Benaroya Research Institute at Virginia Mason (formerly Virginia Mason Research Center), Molecular Genetics Program, Seattle, WA

- 2004- Full Member, Benaroya Research Institute at Virginia Mason, Molecular Genetics Program, Seattle, WA
- 2004- Full Professor (Affiliate appointment), Department of Biology, University of Washington, Seattle, WA
- 2005- Full Member, Cell and Molecular Biology Program, University of Washington, Seattle, WA
- 2007-2008 Program Director, Developmental Systems and Evolution or Development, Integrative and Organismal Systems, National Science Foundation (July 2007-July 2008)

Teaching Experience/ Administrative Responsibilities:

- 1981-85 Genetics 301, Introductory Genetics, Texas A&M University, College Station, TX; graduate teaching assistant
- 1988 Physiology: Cell and Molecular Biology, Woods Hole Marine Biological Laboratory Summer Course, Woods Hole, MA; assistant course instructor.
- 1994-2001 GMS ME781, Introduction to Human Genetics, graduate-level, Boston University School of Medicine; lecturer in immunogenetics
- 1994-99 Chairman of seminar committee for the Center for Human Genetics
- 1995- 2001 Medical Genetics, first-year medical students, Boston University School of Medicine; lecturer in immunogenetics, genomics, and the genetics of development
- 1997 UNESCO International Course (1/6/97-1/17/97), Departamento de Bioquímica, Facultad de Medicina, Universidad de Chile, Santiago, Chile; International training course on molecular techniques of genome mapping and screening; professor.
- 1997-99 GMS PA715, Advanced Immunology -- Molecular Aspects, graduate-level, Boston University School of Medicine; lecturer on the origins and diversification of the immune system.
- 2000 Instructor, Cold Spring Harbor methods course, "Gene Isolation: Advanced Methods in Positional Cloning," Cold Spring Harbor, NY.
- 2001 Advanced Molecular Biology, Boston University School of Medicine, "Genomics and its implications for gene regulation."
- 2002 Instructor, EMBL three-week course, "Molecular and genetic tools for the analysis of medaka and zebrafish development," Heidelberg, Germany.
- 2003 Lecturer, Stanford University course, Stickleback Molecular Genetics, Stanford, CA.
- 2004 Lecturer, University of Washington, Advanced Evolution (R. Huey)

Research Interests:

Genome organization and evolution, evo-devo, immunogenetics, genetics of disease, and zoology.

Awards and Extramural Funding:

- 1985 Graduate Student Minigrant (research supplement) for "Cytogenetic investigations on North American minnows." Texas A&M University, College Station, TX
- 1985 Stoye Award (cash prize) for "Chromosomal NORs as systematic markers in the North American minnows (Cyprinidae)." Best student presentation in genetics, development and morphology at the annual meeting of the American Society of Ichthyologists and Herpetologists, Knoxville, TN
- 1985-86 Tom Slick Graduate Research Fellowship (graduate stipend plus discretionary fund). Texas A&M University, College Station, TX
- 1987-89 Biomedical Research Support Grant, National Institutes of Health (\$20,000 total costs). "Identification of developmental stage-specific immunoglobulin genes." Showa University Research Institute, St. Petersburg, FL
- 1988 Postdoctoral Fellowship, Individual National Research Service Award (postdoctoral stipend; relinquished after receiving Sloan postdoctoral award). "Regulation of immunoglobulin genes during development." NIH, Bethesda, MD
- 1988-90 Postdoctoral Fellowship in Molecular Studies of Evolution (\$80,500 total costs). "Early phylogenetic diversification of vertebrate immunoglobulin genes." Alfred P. Sloan Foundation, New York, NY
- 1989 Participant in molecular evolution workshop, Marine Biological Laboratory, Woods Hole, MA, summer
- 1995 Awardee of travel fellowship (NSF) for participation in International Molecular Biology and Evolution Conference, Hayama, Japan (8/95).
- 1996 American Cancer Society Institutional Research Grant, #IN97-T (\$12,000 direct costs, 1/1/96-12/31/96). "Cloning of the gene defect for X-linked lymphoproliferative disease (XLP)."
- Charles H. Hood Foundation Grant in Child Health (\$50,000 total costs, 1/1/96-12/31/96). "Cloning of the gene defect for X-linked lymphoproliferative disease."
- NIH R29 AI39008 (\$586,000 total costs, 7/1/96-6/30/01). "Cloning and analysis of the gene defect causing XLP."
- NSF IBN-9614940 (\$157,625 total costs, 8/1/96-7/30/99). "The role of gene duplication in the evolution of chordate developmental regulation." In collaboration

with Guenter Wagner and Frank Ruddle (Yale University, New Haven, CT; \$470,000 total costs).

Glaxo/Wellcome Pharmaceuticals Cooperative Research Agreement (\$52,000 total costs, 12/1/96-11/30/97). “Positional cloning and genomics in the pufferfish.”

1999 NSF IBN-9905408 (\$290,000 total costs, 10/1/99-9/29/02). “The role of gene duplication in the evolution of chordate developmental regulation”; continuation of IBN-9614940.

2000 NIH R24 RR14085 (\$1.5 M total costs, 4/15/00-12/31/06). “Genomics resources and infrastructure for the zebrafish.”

2001 DOE (\$200,000 total costs, 10/1/01-9/30/05). “Genomic identification and analysis of shared *α*s-regulatory elements in a developmentally critical homeobox cluster.”

NIH U01 HG02526 (\$3.7 M total costs, 7/1/02-6/30/07). “Virginia Mason BAC library and genomics resources.”

2002 NSF IBN-0207870, (PI: Scott Edwards, Univ. Washington; \$1.1 M total costs, \$400,000 to Amemiya, 8/1/02-7/31/05). BAC library resources from the Reptilia, including birds.

2003 NSF IBN-0321461 (\$315,000 total costs, 8/1/03-7/31/06). “The role of gene duplication in the evolution of chordate developmental regulation”; continuation of IBN-9905408

2004 NIH, NCI intramural program, contract (\$40,000 total costs, 1/1/04-12/31/04). “Comprehensive breakpoint analysis.”

2006 NIH, U19 AI050864-04, pilot project (\$133,350 total costs, 1/1/06-6/30/06). “Development of a new system to study B-cell mediated autoimmunity.”

NIH, R13 HG004094-01, symposium award (PI: Ken Sebens, \$13,000 direct costs). “Genomics and the Life Aquatic.” Role: Co-organizer of meeting with Katie Peichel, co-investigator on grant.

NIH, R21GM079492 (\$503,250 total costs, 1/1/07-12/31/09), “Developmental and genomic studies on the agnathan VLR system.”

CDB-Riken, Kobe, Japan collaborative research agreement (\$40,000 total costs), “Evo-devo of Otx genes.”

2007 NIH 2U54-HG003067-04 (PI, Eric Lander), subcontract of ~\$180,000 to generate BAC libraries of various vertebrate species.

NSF MCB 0719558 (\$413,000 total costs, 8/1/07-7/31/10), “Evolution and development of vertebrate Hox14 genes,” awarded.

NSF ANT 0632527 (\$550,003 total costs, 9/1/07-08/31/10), “HOX clusters, hematopoiesis and genome enablement of Antarctic fishes,” awarded.

CDB-Riken, Kobe, Japan collaborative research agreement (\$40,000 total costs), “Evo-devo of Otx genes.”

2008 NIH R24 RR14085 (\$2,287,500 total costs, competing renewal 6/01/08-5/30/13). “Genomics and infrastructure for the zebrafish.”

Director’s Award, National Science Foundation, “Excellence in Program Management.”

2009 F32 GM087919-01 Amemiya (Sponsor), 06/01/09-12/31/10, stipend plus discretionary funds “Novel insight into stability and change in a basal vertebrate genome,” NIH (NIGMS), NRSA postdoctoral award for Dr. Jeremiah Smith.

Grant Panel Member/Editorial Board:

1994 Grant Panel, Marine Biotechnology (Animal Molecular Genetics), National Oceanic and Atmospheric Administration, Washington, D.C.

1996-98 Molecular Evolution Panel, National Science Foundation, Washington, D.C.

1998-00 Associate Editor, Journal of Experimental Zoology (Molecular and Developmental Evolution)

1999- Editorial Board, Journal of Experimental Zoology (Molecular and Developmental Evolution)

1999 *Ad hoc* member on NIH Comparative Medicine study section, 6/99  
*Ad hoc* member on NIH Immunobiology special emphasis panel, 12/99

2000 *Ad hoc* reviewer on NIH Immunobiology special emphasis panel, 2/00  
*Ad hoc* reviewer on NIH Comparative Medicine study section, 6/00  
*Ad hoc* reviewer on NIH Immunobiology special emphasis panel, 8/00  
*Ad hoc* reviewer on NIH study section for zebrafish mutagenesis screens RFA, 11/00

2002 *Ad hoc* reviewer on NIH Immunobiology special study section, 3/02  
*Ad hoc* reviewer on DOE Genome study section, 6/02  
*Ad hoc* reviewer on NIH Experimental Immunology special emphasis panel, 8/02  
*Ad hoc* reviewer on NIH Immunobiology special emphasis panel, 8/02

2003 *Ad hoc* reviewer on NIH study section for zebrafish tools for mutagenesis, 3/03  
*Ad hoc* reviewer on NIH Experimental Immunology special emphasis panel, 4/03  
*Ad hoc* reviewer on NIH Experimental Immunology special emphasis panel, 7/03  
Community Sequencing Panel Review, Joint Genome Institute, 9/03

- Chairman of NIH Experimental Immunology special emphasis panel, 11/03  
*Ad hoc* reviewer on NIH Genome special emphasis panel, 11/03
- 2004 *Ad hoc* reviewer on NIEHS study section, 02/04  
*Ad hoc* reviewer on NIH Experimental Immunology study section, 02/04  
 Community Sequencing Panel Review, DOE Joint Genome Institute, 4/04  
*Ad hoc* reviewer on NIH Cell and Molecular Immunology study section, 06/04  
*Ad hoc* reviewer on NIH Biology, Development and Aging special emphasis panel, 06/04  
*Ad hoc* reviewer on Superfund-NIEHS special emphasis panel, 10/04  
*Ad hoc* reviewer on NIH Genome special emphasis panel, 11/04
- 2005 *Ad hoc* reviewer on NIEHS study section, 03/05  
 Community Sequencing Panel Review, DOE Joint Genome Institute, 04/05
- 2005- Editorial board of GENE  
 Editorial board of TheScientificWorld JOURNAL (Development and Embryology Domain)
- 2006 *Ad hoc* reviewer on NIH Molecular, Cellular, and Developmental Neuroscience Integrated Review Group, 3/06  
*Ad hoc* reviewer on NIH Genome Sequencing Centers review group, 7/06
- 2007 *Ad hoc* reviewer on NIH Zebrafish Tools review group, 3/07  
*Ad hoc* reviewer on NIH Review Group (NINDS K99/ROO program), 7/07
- 2008 *Ad hoc* reviewer on Molecular Neurogenetics Study Section (ZRG1 MNG-K), 2/08
- 2009 *Ad hoc* reviewer on NIH Zebrafish Tools/Genetic Screens review group, 3/09  
 NSF Panelist, EvoDevo, 10/09  
 Editorial board of BMC EVODEVO  
 Editorial board of *genesis, The Journal of Genetics and Development*

Meetings Organized:

- 1998-2001 Boston Zebrafish meetings (with Ian Drummond). Semi-annual meetings on numerous topics germane to zebrafish biologists.
- 2006 “Genomics and the Life Aquatic,” September 9-12, 2006, Friday Harbor Laboratories, Washington (Katie Peichel, Fred Hutchinson Research Center, co-organizer). This meeting brought together 35 scientists, all of whom employ comparative genomics approaches to derive insights into a variety of biological processes. Most of these individuals study marine organisms, and the use of marine/aquatic systems was emphasized.
- 2008 “Cis Sequence Regulation and Its Evolution,” September 29-October 1, 2008, RIKEN Center for Developmental Biology, Kobe, Japan (Shin Aizawa, RIKEN CDB and

Denis Dubuole, Univ. Geneva, Co-organizers). This symposium brought together experts in disparate fields of biology in order to discuss the characterization of cis-regulatory elements and their roles in development and evolution. <http://www.cdb.riken.jp/cis-sequence2008/index.html>

*Invited Lectures/Invited Conference Participant:*

- 7/88 Woods Hole Marine Biological Laboratory (Woods Hole, MA), "Molecular evolution: patterns and processes."
- 9/88 University of Tampa (Tampa, FL), "Systematics of the North American Cyprinidae (minnows) based on chromosomal nucleolus organizer regions."
- 9/89 Texas A&M University (College Station, TX), "Phylogeny and diversification of immunoglobulin genes."
- 9/89 Oklahoma University Health Sciences Center (Oklahoma City, OK), "Evolutionary diversification of immunoglobulins and their genes."
- 10/89 MD Anderson Cancer Center-Science Park (Smithville, TX), "Origins and diversification of immunoglobulins and their genes."
- 12/89 American Society of Zoologists Symposium on Application of Molecular Genetic Approaches in Understanding the Basis for Immune and Other forms of Specific Recognition (Boston, MA), "Early evolution of immunoglobulin genes."
- 9/90 All Children's Hospital (St. Petersburg, FL), "Progress of the Human Genome Project at Lawrence Livermore National Laboratory and Novel Physical Mapping Strategies for Chromosome 19."
- 10/91 International Congress of Human Genetics Symposium on Genome Physical Mapping (Washington, D.C.), "Closure of chromosome 19 cosmid-contig map using clone pooling schemes."
- 10/91 Louisiana State University Medical Center (New Orleans, LA), "Evolution of gene families: zinc fingers and immunoglobulins."
- 10/91 Texas A&M University (College Station, TX), "The Human Genome Initiative at Lawrence Livermore National Laboratory: Progress and Novel Mapping Strategies for Chromosome 19."
- 6/92 All Children's Hospital (St. Petersburg, FL), "Identification and characterization of the gene defect responsible for myotonic muscular dystrophy."
- 10/92 Banbury Conference on DNA Repeats and Human Gene Mutations (Cold Spring Harbor, NY), participant.

- 4/94 Boston University, Center for Advanced Research in Biotechnology (Boston, MA), "Aspects and applications of the P1 artificial chromosome cloning system."
- 9/94 All Children's Hospital (St. Petersburg, FL). "Novel approaches to cloning the genetic defect for X-linked lymphoproliferative disease (XLP)."
- 3/95 GLAXO (Research Triangle Park, NC). "Applications of the P1 artificial chromosome cloning system."
- 4/95 Wadsworth Institute (Albany, NY). "Novel approaches to large-insert cloning using the P1 artificial chromosome system."
- 8/95 Participant in Japan-U.S. binational workshop on molecular evolution of adaptive characters (Hayama, Japan). "Organization and evolution of immunoglobulin genes, and identification of genes involved in regulation and ontogeny of the immune system."
- 9/95 Kyoto University School of Medicine (Kyoto, Japan). "Use of the P1 artificial chromosome system to study the evolution of the vertebrate immune system."
- 4/96 Boston University School of Medicine, Department of Immunology (Boston, MA). "Evolutionary trends and diversification of the immunoglobulins and their genes."
- 9/96 Dalhousie University, Department of Biology (Halifax, Nova Scotia, Canada). "Molecular evolution of genes of the immune system" and "Use of large-insert bacterial cloning systems for studies in evolution and development."
- 6/97 Basel Institute for Immunology (Basel, Switzerland). "Practical applications of large bacterial cloning systems towards problems in immunology and development."
- 6/97 Max Planck-Institut für Molekulare Genetik (Berlin, Germany). "Origins of the adaptive immune system."
- 2/98 Boston University (Boston, MA), Physiology, Endocrinology & Neuroscience Program, Department of Biology. "Evolutionary origins and development of the vertebrate immune system."
- 9/98 Texas A&M University (College Station, TX), Genetics Program. "Early origins and development of the vertebrate immune system."
- 10/98 LI-COR invited speaker, American Society of Human Genetics meeting (Denver, CO). "Use of the LI-COR 4200 system for diagnostic sequencing and for analyzing extended genomic regions."
- 2/99 Invited participant, NIH meeting on non-mammalian model systems (Bethesda, MD)
- 7/99 Guest lecturer in Immunology Training Program (Boston Univ. School of Medicine, Boston), "Evolution, divergence and development of the vertebrate adaptive immune system."

- 12/99 Forsyth/Harvard Dental Institute. "Origins, divergence and development of the early vertebrate immune system."
- 02/00 University of Connecticut Health Sciences Center (Farmington, CN), Dept. of Molecular Oncology. "How the immune system originated and diversified."
- 05/00 University of South Florida Medical School (Tampa, FL), Dept. of Microbiology. "A mutagenesis screen for genes affecting the immune system in zebrafish."
- 09/00 Invitee, NCI-sponsored meeting on Aquaria Fish Models of Human Disease, San Marcos, TX.
- 10/00 Invitee, Sanger Centre workshop, "Sequencing of the Zebrafish Genome," Sanger Centre, Cambridge, UK. Presented talk entitled "Zebrafish BAC and PAC resources and their applications."
- 11/00 Virginia Mason Research Center (Seattle, WA), "Origins, divergence, and development of the vertebrate adaptive immune system."
- 11/00 Evo-Devo Program, University of Oregon (Eugene, OR), "Evo-Devo and the vertebrate phylad: the immune system, *Hox* genes, and comparative genomics."
- 2/01 Biology Department, Boston University, "Comparative vertebrate genomics and its application to problems in immunology and development."
- 4/01 Biochemistry Department, University of South Florida, "Comparative vertebrate genomics and its application to problems in immunology and development."
- 10/01 Children's Hospital of Oakland Research Institute, "Vertebrate comparative genomics: BAC-PAC'ing through the biological abyss."
- 2/02 Evolutionary Immunobiology -- New Approaches, New Paradigms. Invited speaker/discussant, "Genomic approaches to problems in comparative immunology." Charleston, S.C.
- 5/02 Department of Zoology, Univ. of Oklahoma, "Vertebrate comparative genomics and its application to problems in evolution and development."
- 6/02 Department of Genome Sciences, Univ. of Washington, "Vertebrate comparative genomics approaches to problems in evolution and development."
- 9/02 Department of Biology, Univ. of Alberta, "Comparative genomics and its application to problems in evolution and development."
- 12/02 The McKusick-Nathans Institute of Genetic Medicine, Johns Hopkins University, Baltimore, MD, "Comparative genomics approaches to problems in developmental genetics and evolution."

- 12/02 Center of Marine Biotechnology, University of Maryland Biotechnology Institute, Baltimore, MD, "Comparative genomics, BAC libraries, and vertebrate Evo-Devo."
- 3/03 University of Virginia School of Medicine, Charlottesville, VA, "Comparative genomics and its applications to problems in evolution and development."
- 3/03 Third International Symposium on the Biology of Vertebrate Sex Determination. Kona, Hawaii. Plenary Lecture: "Comparative genomics, BAC libraries and sex determination."
- 5/03 The Louis Du Pasquier Symposium on Phylogeny of the Immune System, San Francisco. "Adaptive evolution in an extreme environment."
- 7/03 International Congress of the International Society of Developmental and Comparative Immunology, Scotland. Plenary Lecture: "Comparative genomics and the evolution of the vertebrate immune system and Hox genes."
- 9/03 Conference on Aquatic Animal Models of Human Disease, ATCC, Manassas, VA, Plenary Lecture in Comparative Genomics: "Comparative genomics, BAC libraries and vertebrate Evo-Devo."
- 12/03 University of Washington, Department of Biology, Seattle, WA, "Comparative genomics and vertebrate Evo-Devo."
- 02/04 University of Victoria, Department of Biology, Victoria, British Columbia, "Genomics, multi-gene families and vertebrate Evo-Devo."
- 03/04 Evolution of Developmental Diversity meeting, invited talk, Cold Spring Harbor Laboratory, NY, "HOX cluster evolution in the vertebrates-Hodgepodge of conservation and evolutionary plasticity."
- 07/04 International Congress of Immunology, minisymposium speaker in Phylogeny of Immune System, Montreal, Canada, "Genomic approach to studying evolution of the immune system: Rearranging genes in the coelacanth."
- 07/04 Dana-Farber Cancer Institute, Boston, MA, "What does it take to make an adaptive immune system?"
- 12/04 Molecular Biology Society of Japan, Kobe, Japan (symposium on *cis*-Regulatory Sequences and Animal Evolution), "Evolution of vertebrate genomes and their regulatory sequences."
- 12/04 Osaka University, Osaka, Japan (symposium on the Genetic and Cellular Basis of Life), "Old four legs" or just an old fish: The story of the coelacanth as revealed through comparative genomics of the HOX, immunoglobulin and protocadherin clusters."
- 12/04 Center for Developmental Biology, Riken, Kobe, Japan, "Evolution of the vertebrate immune system."

- 12/04 The Graduate University for Advanced Study, Sokendai, Hayama, Japan, “What does it take to make an adaptive immune system?”
- 12/04 Tokyo University, Department of Biology, “Comparative genomics and its applications to problems in development and evolution.”
- 01/05 Plant and Animal Genome XIII conference, San Diego, Aquaculture symposium, “Practical applications of comparative genomics.”
- 01/05 University of Washington, Systematics Seminar Series, Department of Biology, Seattle, WA, “Old ‘Four Legs’ or just and old fish? The story of the living coelacanth as revealed through comparative genomics of the HOX, immunoglobulin and protocadherin clusters.”
- 03/05 15<sup>th</sup> International Congress of Endocrinology, Boston, MA, “Evolution of Vertebrate Development: Insights from Comparative Genomics”
- 03/05 Texas A&M University, Genetics Program, College Station, TX, “Old ‘Four Legs’ or just and old fish? The story of the living coelacanth as revealed through comparative genomics .”
- 07/05 Society for Experimental Biology annual meeting, Barcelona, “Old ‘Four Legs’ or just and old fish? The story of the living coelacanth as revealed through comparative genomics.”
- 08/05 Mount Desert Island Stem Cell Symposium, Bar Harbor, ME, “What does it take to make an adaptive immune system?”
- 02/06 San Juan Nature Institute, Friday Harbor, WA, “‘Old Four Legs’ or just an old fish: The story of the coelacanth as revealed through an inside-out view.”
- 02/06 Seattle University, Wismer Center, Seattle, WA, Panelist on Intersections of Race and Gender in Science, Engineering, and Technology Fields: Challenges, Career Advice, and Policy Implications
- 04/06 Center for Cell Dynamics, Friday Harbor, WA, “Comparative genomics and the evolution of vertebrate Hox clusters and their genes.”
- 05/06 Woods Hole Oceanographic Institute, Woods Hole, MA, “‘Old Four Legs’ or just an old fish: A story of the coelacanth in three acts.”
- 06/06 Stazione Zoologica Anton Dohrn, Naples, Italy. “What does it take to make an adaptive immune system? Genomics and development of the agnathan VLR system.”
- 07/06 Platform presentation, International Society of Developmental and Comparative Immunology, Charleston, SC. “Genomics and evolution of the immune system: Rearranging genes in the coelacanth.”

- 07/06 Workshop organizer, International Society of Developmental and Comparative Immunology, Charleston, SC. Session 21B: Genomic Models in Fish Immunity.
- 09/06 Genomics and the Life Aquatic Symposium, Friday Harbor, WA. “Genomes, genomes and more genomes! Where are we going with all this information?”
- 11/06 Immunology seminar, All Children’s Hospital, St. Petersburg, FL. “Emergence of a radically different genomic solution to the same problem: Evolution of adaptive immunity in primitive vertebrates.”
- 11/06 Medical Grand Rounds, All Children’s Hospital, St. Petersburg, FL. “Genomes, genomes and more genomes! Where are we going with all this information? And how will the future of medicine be shaped by genomics?”
- 1/07 Integrative and Organismal Systems, National Science Foundation, Arlington, VA. “Evolution of vertebrate developmental complexity.”
- 1/08 BIO-08, Grahamstown, South Africa (joint meetings of the South African Society for Biochemistry and Molecular Biology, Biotech SA and the South African Society for Microbiology. “Why we need to sequence the genome of the living coelacanth.”
- 3/08 University of Maryland (Behavior, Ecology, Evolution and Systematics Program), College Park, MD. “Evolution of vertebrate developmental complexity.”
- 4/08 Harvard University (Organismal Evolutionary Biology), Cambridge, MA. “Evolution of vertebrate developmental complexity.”
- 8/08 National Science Foundation, Research Initiation Grant-Career Advancement Award Program, awardee workshop.
- 9/08 16<sup>th</sup> CDB Meeting (Cis-sequence Regulation and its Evolution), Center for Developmental Biology, Kobe, Japan. “Genome evolution and the dynamic recruitment of functional cis-sequences during the radiation of vertebrates.”
- 10/08 Resource Directors Meeting, National Center for Research Resources, Washington D.C.
- 10/08 ICREA Conference on the Origin and Early Evolution of Metazoans, Barcelona, Spain. “So many genomes, so many surprises! How comparative genomics is revising our understanding of the mechanistic principles of Darwinian evolution.”
- 2/09 University of Hawaii Medical School, Honolulu, HI. “Evolution of vertebrate developmental complexity.”
- 3/09 Institute of Integrative Genomics, Vanderbilt University School of Medicine, Nashville, TN. “Emergence of developmental and genomic complexity in a basal vertebrate”

- 4/09 Department of Biology, University of New Mexico, Albuquerque, NM. “So many genomes, so many surprises! How comparative genomics is revising our understanding of the mechanistic principles of Darwinian evolution.”
- 8/09 AAAS Symposium, Evolutionary Innovations: Where Ecology, Development and Macroevolution Inversect, SF State University, CA. “How genomics is reshaping our ideas about evolution.”
- 10/09 Titisee Conference on Genome Evolution and the Origin of Novel Gene Functions, Titisee, Germany. “Genome dynamism and functional cooption in a basal vertebrate.”  
Department of Immunobiology, University of Freiburg, Germany. “Extreme functional divergence of an immune receptor system in a basal vertebrate.”
- 1/10 Late breaking symposium -- Insights of early chordate genomics: Endocrinology and devleopment in amphioxus, tunicates and lampreys. “Programmed genome dynamism and its evolutionary cooption in a basal vertebrate.”
- 2/10 Department of Veterinary Molecular Biology, Montana State University, MT. “Nature recycles a developmental program for adaptive immunity in a basal vertebrate.”

Patents:

“Variable lymphocyte receptors, related polypeptides and nucleic acids, and uses thereof,” USPTO 60/573,563, July 2004, Max Cooper, Zeev Pancer, Chris Amemiya, Larry Gartland, and Goetz Ehrhardt).

“Variable lymphocyte receptors, related polypeptides and nucleic acids, and uses thereof,” European Patent Office, 05856742.1-1223-US2005017901, Max Cooper, Zeev Pancer, Chris Amemiya, Larry Gartland, and Goetz Ehrhardt).

“Variable lymphocyte receptors, related polypeptides and nucleic acids, and uses thereof,” New Zealand Patent Office, #550772, Max Cooper, Zeev Pancer, Chris Amemiya, Larry Gartland, and Goetz Ehrhardt).

Professional Societies:

American Association for the Advancement of Science  
 American Society of Ichthyologists and Herpetologists  
 International Society for Developmental and Comparative Immunology  
 New York Academy of Sciences  
 Society for Integrative and Comparative Biology

Publications:

Refereed papers and reviews:

1. Amemiya, C. T., Bickham, J. W. and Gold, J. R. 1984. A cell culture technique for chromosome preparation in cyprinid fishes. *Copeia* 1984: 232-235.
2. Amemiya, C. T. and Gold, J. R. 1986. Chromomycin A<sub>3</sub> stains nucleolus organizer regions (NORs) of fish chromosomes. *Copeia* 1986: 226-231.
3. Amemiya, C. T., Kelsch, S. W., Hendricks, F. S. and Gold, J. R. 1986. The karyotype of the Mexican blindcat, *Prietella phreatophila* Carranza (Ictaluridae). *Copeia* 1986: 1024-1028.
4. Gold, J. R. and Amemiya, C. T. 1986. Cytogenetic studies in North American minnows (Cyprinidae). XII. Patterns of chromosomal NOR variation among fourteen species. *Canadian Journal of Zoology* 64: 1869-1877.
5. Gold, J. R., Amemiya, C. T. and Ellison, J. R. 1986. Chromosomal heterochromatin differentiation in North American cyprinid fishes. *Cytologia* 51: 557-566.
6. Amemiya, C. T. and Gold, J. R. 1987. Chromomycin staining of vertebrate chromosomes: enhancement of banding patterns by NaOH. *Cytobios* 49: 147-152.
7. Amemiya, C. T. and Gold, J. R. 1987. Karyology of twelve species of North American Cyprinidae (minnows) from the southern United States. *Cytologia* 52: 715-719.
8. Gold, J. R. and Amemiya, C. T. 1987. Genome size variation among North American minnows (Cyprinidae). II. Variation among twenty species. *Genome* 29: 481-490.
9. Gold, J. R., Amemiya, C. T., Karel, W. J. and Iida, N. 1988. The karyotype and genome structure of the pirate perch *Aphredoderus sayanus* (Aphredoderidae: Teleostei). *Experientia* 44: 68-70.
10. Amemiya, C. T. and Gold, J. R. 1988. Chromosomal NORs as taxonomic and systematic markers in the North American cyprinid fishes. *Genetica* 76: 81-90.
11. Gold, J. R., Zoch, P. K. and Amemiya, C. T. 1988. Cytogenetic studies in North American minnows (Cyprinidae). XIV. Chromosomal NOR phenotypes of eight species from the genus *Notropis*. *Cytobios* 54: 137-147.
12. Haire, R. N., Shamblott, M. J., Amemiya, C. T. and Litman, G. W. 1989. A second *Xenopus* immunoglobulin heavy chain constant region isotype gene. *Nucleic Acids Research* 17: 1776.
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