VIRGINIA ARAXIE ZAKIAN

Curriculum Vitae

PRESENT POSITION AND ADDRESS

Harry C. Wiess Professor in the Life Sciences
Department of Molecular Biology
Princeton University
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CITIZENSHIP: U.S.A.

RESEARCH INTERESTS

Telomeres, DNA helicases, Replication fork progression, Chromosome stability, Genome integrity

EDUCATION, RESEARCH EXPERIENCE, AND PROFESSIONAL POSITIONS

A.B. 1970, Cornell University, College of Arts and Sciences, Ithaca, NY (Phi Beta Kappa, 1969; cum laude in Biology; distinction in all subjects; research Xenopus development, with Dr. A.W. Blackler).
Ph.D. 1975, Yale University, Dept. of Biology (with Dr. Joseph G. Gall, DNA replication in Drosophila; NDF pre-doctoral fellowship).
Postdoctoral Fellow 1975-76, Princeton University, Dept. of Biochemistry (with Dr. Arnold J. Levine, Replication of Adeno and SV40 viruses; NIH post-doctoral fellowship)
Postdoctoral Fellow 1976-78, University of Washington, Dept. of Genetics (with Dr. Walton L. Fangman, DNA replication in yeast; NIH post-doctoral fellowship)
Assistant Member 1979-83, Fred Hutchinson Cancer Research Center, Basic Sciences
Associate Member 1984-1987, Fred Hutchinson Cancer Research Center, Basic Sciences
Member 1987-1995, Fred Hutchinson Cancer Research Center, Basic Sciences (tenured position)
Affiliate Faculty 1979-1995, U. of Washington (Depts. of Genetics and Pathology)
Professor, Department of Molecular Biology, Princeton University, July 1995- to date
Harry C. Wiess Professor in the Life Sciences, Princeton University, July 2000- to date
Affiliate faculty, Princeton University, Program in Gender and Sexuality Studies, 2010-

FELLOWSHIPS AND RESEARCH SUPPORT

NSF Undergraduate Fellow, University of Pennsylvania (Summer 1968), Cornell University (Summer 1969)
NSF Pre-doctoral Fellowship (1970-73); NSF Fellowship, Experimental Embryology, Bermuda Biological Station (Summer 1971)
NIH Postdoctoral Fellowship (1975-78) (declined fellowships from American Can Soc, Anna Fuller Soc)
NIH DNA Replication and Chromosome Structure in Yeast, RO1 GM26938 (1979-2017) (Merit award status, 5/00-09)
NIH Structure and Behavior of Yeast Telomeres, RO1 GM43265 (1990-2016) (4% priority score in 2012 review)
NIH Telomere maintenance and replication fork progression in yeast and human cells 1R35GM118279, (MIRA), 7/6/16-6/30/21

HONORS

Fellow, American Academy for the Advancement of Science, elected 1992
Fellow, American Academy of Microbiology, elected 1993
Travel Fellowship, Ministry of Education, Japan, 1993
American Society of Cell Biology, Women in Cell Biology, Senior Woman Award, 1995
Distinguished Lecture Series, NIEHS, 1997
June Wood Lecture, Indiana University, 1997
Blaffer Seminar, University of Texas M.D. Anderson Cancer Center, 1997
Elkin Distinguished Lectureship, Winship Cancer Center, Emory University, 1999
Harold Varmus' NIH Wednesday Afternoon Lectureship, 1999
Merit Award, NIGMS of the National Institutes of Health, 5/00- 11/09

Distinguished Lecture, Lawrence Berkeley National Laboratory, Life Sciences Division, 2003
Honors Program Lecture, NYU School of Medicine, 2004
Second Annual Athena Lecture, Royal Society, London, 2005
Keynote Speaker, Kyoto Japan, Gender Equality Workshop, 2006 (cancelled)
Wall of Fame, Upper Darby Sr HS, Upper Darby PA, 2006
Danny Kaye Lecture, St. Jude's, Memphis, 2008
Keynote Speaker, College of NJ, Advancement program Symposium, 2010
Barnum Museum Lecture, Tufts University, 2011
President's Lecture series, Princeton U, 2011
Leading Edge Lecture, City of Hope, 2012
Keynote speaker, Anat Krauskopf Symposium, Tel Aviv IS, 2012
Magni Lecture, Milan Italy, 2012
National Institutes of Aging, Keynote speaker Annual NIA Post-bac Day, 2013
Diamonds are Forever: Celebrating First 75 Years, Princeton Adult School, 2013
Keynote speaker, Annual meeting Swedish Society Biochemistry, Biophysics and Molecular Biology, Marstrand, Sweden, 2014
Keynote speaker, GRS for Gordon Res Conf., Chromosome Dynamics, 2015
Keynote speaker, EMBO workshop, Telomere chromatin and telomere fragility, Singapore, 2015
Featured speaker, EMBO conference Telomeres, Telomerase and Disease, Brussels, Belgium, 2016
Distinguished speaker, UCLA-Caltech Annual Medical Scientist Training Program Research Conference, 2015 (declined)
Keynote lecturer, "Molecular Genetics and Epigenetic" co- organized by the institutes Pasteur and Curie in Paris, 2016 (cancelled).
Distinguished speaker, Pelotonia Symposium, Cancer Research program, Ohio State U, 10/17
Keynote speaker, Stupka Research Symposium, Biochemistry and Biophysics, Iowa State U, 2018
Representative for U.S. Embassy in Madrid, Spain for promoting women in science in Spain, 2017
Winge-Lindegren Address, Yeast Genetics Meeting, Stanford CA, 2018
Elected to National Academy of Sciences, 2018

SERVICE: NATIONAL INSITUTES OF HEALTH (NIH)

Member NIH Biomedical Sciences Microbial Genetics Study Section, 1991-1995
National Institutes of Health Reviewers Reserve, 1995-1999
Member, National Advisory General Medical Sciences Council, 2004-09
Member National Cancer Institute (NCI) Board of Counselors for intramural programs in Basic Science, 2011-2016 (evaluates science and determines funding for all intramural NCI basic science labs)
National Advisory General Medical Sciences Council, Subcommittee, Division Gen. and Dev. Bio., 1998
NIH Advisory group on Non-mammalian model organisms, co-chair yeast sub-group, 1999
Panel on Scientific Boundaries for Review: redesign study sections in development and aging, 2001
Co-chair, Evaluation of NIH MORE (Minority Opportunities Research) programs 2005-06
Strategic planning conference for NIGMS five-year plan (chair of increasing minorities sub-group), 2007
National Advisory General Medical Sciences Council standing committee on Training and Faculty Development, 2007-09
Co-chair site visits NCI Labs of: Biochemistry, 2011; Receptor Biology and Gene Expression, 2012; Gene Regulation and Chromosome Biology, 2013; Subgroup of Receptor Biology and Gene Expression, 2014; Biochemistry, 2015

ADDITIONAL GRANT REVIEWING:

Member, Microbiology and Virology Study Section, American Cancer Society, 1985-89
Reviewer, Human Frontier Science Program, 1995-2000
Damon Runyon Cancer Research Foundation, Scientific Advisory Board, 1999-03
Reviewer HHMI Canada/Latin America Competition, 2001

Member, HHMI Review of Research Training Fellowships for Medical Students, 2002-04
HHMI, Review Gilliam Fellowships for Advanced Study awards, 2011

SERVICE AND MEMBERSHIP IN PROFESSIONAL SOCIETIES/AFFILIATIONS:

American Society of Cell Biology (Program Committee 1980, 1995; Resource Bureau, Women in Cell Biology, 1997-; Membership Committee 1981-83; Education Committee 1986-89; Awards Committee 2001; Young Investigator Awards Committee, 2007; Council 2009-12; Chair, Early Career Award Selection Committee, 2010)
American Society for Microbiology (Raymond W. Sarber Award Selection Committee, 1996-1999; Eli Lilly and Company Research Award Selection Committee, 2000- 03)
Genetics Society of America (nominating Committee 1983; Board of Directors, 1997-9)
National Yeast Committee (1985-89)
NY Academies of Sciences, advisory panel, women in science and engineering, 2004
AAAS: Electorate Nominating Committee of the Section on Biological Sciences, 2004-07; Secretary Section G, Biological Sciences, 2005
Rosalind Franklin Society, (interdisciplinary/international society to promote women in science), founding board 2007-
American Women in Science
Member, Cancer Institute of NJ, 2010-

ADDITIONAL SERVICE:

Editor/Associate Editor/Editorial Board: Plasmid (1986-1990), Chromosoma (1990-2010), J. Exptl. Zoology (1991-1996), Trends in Cell Biology (1991-1997), Molecular and Cellular Biology (1992-98), Genes to Cells (1994-98), Molecular Cell (1997-2002), Molecular Biology of the Cell (1999-2003), DNA Repair (2004-), FEBS Journal (2009-11); Editorial Board, Current Opinion in Genetics and Development.
Member, President's Council of Cornell Women (PCCW), 2001- 11 (advisory group to Cornell President on women's issues)
Faculty 1000 Biology, 2009-13
Advisory Committee, Memorial Sloan Kettering Cancer Center Graduate program, 2014-
Scientific Advisory Board Center for Chromosome Stability, Copenhagen, Denmark, 2015-
Cancer Research UK Quinquennial Review, 2016
Participant, HHMI and Burroughs Welcome Mentoring workshop, 2016
Meeting organization:
Program Committee for 1986, 1987, and 1989 Yeast Genetics and Molecular Biology Meeting
Co-organizer, Seattle Area Yeast Meetings, 1985-1987
Co-organizer, American Society of Cell Biology 1989 Summer Symposium "Chromosome Structure and Segregation"
Co-organizer, Gordon Conference, Plasmid and Chromosome Dynamics; 1995, 1997
Programming Consultant, Keystone Symposia, 2002, 2003, 2005-6
Co-organizer, 2007 and 2010 American Association Cancer Research Telomerase and Cancer Meeting
Co-organizer 2009, 2011, 2013 Cold Spring Harbor Lab Telomere Meetings
Co-organizer 2012, FASEB Yeast Chromosome dynamics meeting
Co-organizer 2013, Joe Gall 85th birthday symposium
Co-organizer DNA Replication, Recombination and Repair Theme 2014 American Society Biochemistry and Molecular Biology meeting
Institutional Reviews:
University of Colorado, Molecular, Cell, & Developmental Biology Department, 2003
Dr. S. Jackson, Wellcome Trust/Cancer Research UK, Institute Cancer & Dev. Biology, Cambridge, 2004
Dr. R. Lahue, Science Foundation of Ireland, National U of Ireland at Galway, Ireland, 2009
Trinity College, Dublin, Ireland, School Genetics and Microbiology, 2010

Institute Basic Sciences, Seoul Korea, 2014
Site Visit Member CRUK/MRC Oxford Institute Radiation Oncology for Dr. M. Tarsounas 12/16,
Site visit, Center for Chromosome Stability, Copenhagen, Denmark, 5/17
External PhD Reviews:
Megan van Overbeek, Rockefeller University, 2008
Rebecca Burgess, 2009, Columbia Medical School, Genetics
Pranav Oza, U of MA Medical School, 2010
Hugo Almeida, Instituto de Tecnologia Química e Biológica, Universidade Nova de Lisboa Portugal, 6/13

PRINCETON UNIVERSITY SERVICE:
Head, President's Task force on the Status of Women in Science and Engineering; Strategy to attract and retain highly talented women faculty in the natural sciences and engineering, 2001- 2003
Member, University wide Target of Opportunity Search Committee to increase diversity of faculty, 2003-06, 2007-08
Representative to Nine Universities, Gender Equity Analysis 2003-04
Member, University-wide Faculty Advisory Committee on Appointments and Advancements (C3), 2012-13
Churchill Scholarship Selection committee, 1997-2001
Minority student freshman mentor, 1997-98
Member panel on National Institutes of Health, university Research Board, 2004
Council of the Princeton University Community (CPUC), 2003-09; Executive Committee, 2008-09
Faculty Committee on Policy, 2008-09
Talks: Alumni University, 1997, 2010; Alumni Studies Program, 1998; HHMI sponsored summer program for high school teachers (2005, 12; 13); Tiger talk, high school students (2006); President's Lecture series, 2011; Moderator, 2011 Reunions Panel on Women in Science; Diversity on Campus, Practices, Policies and Culture, 12/12.

PRINCETON DEPARTMENT OF MOLECULAR BIOLOGY SERVICE:
Executive Committee, Department of Molecular Biology, 1995 – 2004.
Molecular biology Graduate Student Admissions Committee, 1996- 2011.
Head seminar program, 1996; 2000-02
Departmental Search Committees: 1996, 1998, 2008-9
Assistant Professor Liaison, 1996- 2010
Head, Departmental graduate student recruiting reorganization committee, 1998
Departmental Retreat re-organization committee, 1998
Head, Departmental Tenure Review committee, 2001
Departmental seminar reorganization committee, 2002
Head, Review departmental mentoring program
Head, Molecular biology graduate student recruiting, 1998-2000
Advisor, Molecular Biology undergraduates interested in graduate school, 1998- 2012
Annual review of junior faculty: 1997, 1999, 2003, 2004, 2005, 2006, 2007, 2008, 2011, 2012, 2014
Multiple tenure and full professor promotion committees
Chair, Princeton MD-PhD program, 2012-2015
Member, Innovation in Funding committee, 2014-2016
Chair, Molecular Biology Postdoctoral Program, 2015-2016

TEACHING RESPONSIBILITIES:
Lectures in graduate courses U of Washington, including Genetics 551, 552 (1977, 83, 84); Tumor Biology (1980); Introduction to Pathology (1982); Cell and Molecular Biology (1983-94); Biochemistry (1984); Pathology of Aging: Genetic Approaches (1985).

Graduate Seminar: DNA Recombination, 1983, U of Washington (co-head)
Cell and Molecular Biology of the Nucleus, UCONJ 504, 1990-1994, U of Washington (course head)
Graduate seminar: Molecular Aspects of Chromosome Structure, 1991, University of Washington (course head).
Eukaryotic Chromosome Structure, Princeton University, 1996-7 (course head)
Eukaryotic molecular genetics, MOLBIO 506 Princeton University, 1999- 2004 (course co-head)
Lectures in Cancer Biology, Princeton University, 2000-2005.
Genome Integrity and Human Disease MOL BIO 440, yearly 2005- to date (course head)
Lecture in WOM393, A. Creager's course Seminar on Gender and Science 2003
Member of graduate committees Princeton U: K. Hagstrom (P. Schedl), M. Gaszner (P. Schedl), T. Caspary (S. Tilghman), A. Hark (S. Tilghman), I. Ivanovska (M. Rose), S. Toberry (M. Rose), P. Simon (J. Broach), J. Blanton (P. Schedl), D. Katz (S. Tilghman), J. Mathis (M. Rose), D. Gohl (P. Schedl), M. Klovstad (T. Schupbach), S. Zaman (J. Broach); Karl Zawadzki (J. Broach); Farnaz Absalan (J. Broach); Erandi De Silva (M. Llinás); Jessica Landis (C. Murphy); Yuling Hua (Y. Kang); Anna Arnaudo (I. Cristea); Wen Wen Fang (L. Landweber); Caroline DeHart (J. Flint); Abigail Trarbach (M. Rose); Timothy Arlow (M.Rose/A. Gammie), April Williams (Coleen Murphy); Leslie Beh (L. Landweber, EEB); Daniel Wolle (P. Schedl); Derek Clay (L. Landweber); Wenyang Li (Y. Kang); Talya Yerlici,(Landweber)

FRED HUTCHINSON CANCER RESEARCH CENTER RESPONSIBILITIES
Assistant Member Representative to Basic Sciences Advisory Committee 1979-80
Initiator and Head local seminar series, 1980-81
Search Committee 1981-83, 1984-86, 1987-1989, 1990-1991
Graduate Program Committee 1981-1995
Glassware Committee 1982-1995
Library Committee 1985-1995
Participant, Director's Forum 1986-1989

INVITED TALKS (1994 to date)
1994: Keystone Symposium, Molecular Basis of Cancer Therapy, Durango CO, 3/94; FASEB Conference, Yeast Chromosome Structure; speaker and session chair, Gordon Conference "Nuclear Proteins, Chromatin Structure and Transcription 7/94; 7/94Banbury Conference, Telomeres, Cold Spring Harbor, NY; speaker and session chair.10/94 Chromosome Structure and Function Workshop, Chiba, Japan,11/94; Seminars: Harvard Medical School (1/94); U. Texas SW Medical Center, Dallas (3/94); U. Texas, San Antonio (3/94); Johns Hopkins (4/94); U of British Columbia (5/94)
1995: Chromosome Segregation and Aneuploidy, Sorrento, Italy; speaker and session chair, 4/9; Gordon Conference, "Chromosome and plasmid dynamics" (meeting co-chair), 7/95; Gordon Conference, "Chemotherapy of experimental and clinical cancer" 7/95; Genomic Instability & Carcinogenesis, Princess Takamatsu Cancer Research Fund, Tokyo, Japan; speaker and session chair, 11/95; Seminars: MIT (1/95); Harvard Medical School (1/95); Seattle Biomedical Research Institute (4/95); U Massachusetts School of Medicine (5/95); Frederick Cancer Center (9/95); Thomas Jefferson U. (10/95)
1996: Honolulu Workshop on Cancer in Werner Syndrome, US-Japan Cooperative Can. Res. Progr. 2/96; Bristol-Myers Squibb Symposium, "The Molecular Basis for Cancer: Clinical Applications", Segovia, Spain, 4/96; FASEB Conference, Yeast Chromosome Structure, 6/96; Pezcoller Symposium, Genomic Instability and Immortality in Cancer, Trento Italy, 6/96; Gordon Conference, "Nuclear Proteins, Chromatin Structure, & Transcription", speaker and session chair, 7/96; Geron Telomerase and Cancer Symposium, Hawaii, 6/96 (cancelled); **8/96;** "Centromeres and Telomeres", Juan March Foundation, Madrid, Spain, speaker and session chair, 9/96; "Dancing Partners: Proteins and DNA", NCI mini-symposium, 9/96; "Mapping, structure, and function of centromeres and telomeres", Oxford, UK, 10/96; Banbury Conference, Telomeres, Cold Spring Harbor, NY, speaker and session chair, 11/96; 6th International Congress on Cell Biology, plenary speaker, San Francisco, 12/96; Seminars: La Jolla Cancer

Research Foundation (1/96); Rutgers (1/96); Bristol-Myers Squibb (2/96); Vanderbilt U (1/96); U. Texas SW Medical Center, Dallas (2/96); U of MD (3/96); Carnegie-Mellon (3/96); U of Rochester (4/96); Cornell U (5/96); Columbia U (5/96)

1997: Ciba Foundation Symposium, Telomeres and Telomerase, London, 2/97; Cambridge Symposium, Genetic Instability, Taos, NM, 3/97; FASEB Transcription Meeting, Snowmass CO, 7/97; Gordon Conference, "Plasmid and Chromosome Dynamics"(Meeting co-chair), 7/97; Worcester Foundation, Symposium on the Nucleus, Woods Hole, MA, speaker and session chair, 7/97; Gene functions to Cell Differentiation, Tokyo, Japan, speaker and session chair, 9/97; Seminars: NIEHS 1/97; U of Chicago (2/97); U of Pennsylvania (2/97); Stanford U (2/97); U of Pittsburgh (3/97); Indiana U (4/97); Mt. Holyoke (4/97); Brandeis U (5/97); U of Roma (5/97); U of VT (10/97); MD Anderson Can. Center (10/97); Hershey Medical School (11/97)

1998: American Association Cancer Res. Annual Meeting, Symposium speaker, 4/98; Chromosomes and the Cell Nucleus, Guanacasta, Costa Rica (cancelled), 4/98; 8th International Symposium on Genetics of Industrial Microorganisms, Jerusalem, Israel, 6/98; FASEB Transcription, Snowmass CO, speaker and session chair, 7/98; Geron, Telomerase and Cancer symposium, Maui Hawaii, speaker and session chair, 8/98; FASEB, Yeast chromosome structure, 8/98; Seminars: Penn State U, (1/98); Albert Einstein College of Medicine (1/98); DC Chapter of AWIS (2/98); U of Iowa (3/98); Salk Institute (4/98); U Louisiana Med School (4/98), Yale U (9/98), Carnegie Institute (10/98); UMDNJ- New Jersey Medical School (10/98); Sloan Kettering (11/98); UMDNJ/Rutgers U (11/98)

1999: CSR/NIGMS/NCI/NIA Workshop Chromatin, Transcription and DNA Replication, 2/99; CSH Telomere Meeting, speaker and session chair, 3/99; Trinucleotide repeat meeting, Chapel Hill, NC, 4/99; Human Frontier of Science, Replicon Theory and Cell Division, Strasbourg, France, 5/99; Juan March Workshop, Telomeres and telomerase, Madrid, Spain, speaker and session chair, 6/99; Molecular Cell Biology Gordon Conference, Tilton, NH, 6/99; FASEB Chromatin and Transcription, Snowmass, CO,7/99; Plasmid and chromosome dynamics Gordon Conference, speaker and session chair, 8/99; Juan March Workshop, Helicases, Madrid, Spain, 11/99; Seminars: Emory U (2/99); U of Washington (3/99); NIH (10/99); UCSF (11/99)

2000: Miami Nature Biotechnology Winter Symposia, 2/00; Keystone Symposium on Chromatin Structure and Function, 2/00; FASEB Transcriptional Regulation during Cell Growth, Differentiation and Development, 6/00; FASEB Yeast chromosome structure, 8/00; Physicians and Surgeons of Columbia U Biomedical Sciences Symposium, 8/00; Salk Institute Conference on Eukaryotic DNA Replication, speaker and session chair, 9/00; Seminars: Brown U (3/00); Yale U (9/00); U of VA (10/00); Columbia U Med School (10/00); U Texas Health Sciences at San Antonio (11/00)

2001: Lineberger Cancer Symposium, 4/01; 3rd International conference on unstable microsatellites and human disease, Netherlands, 4/01; Chromosome Workshop 2001, Rio de Janeiro, Brazil, speaker and session chair, 5/01; FASEB Chromatin and Transcription, Snowmass CO, 7/01; FASEB helicase meeting, Saxton's River, VT, 7/01; Plasmid and chromosome dynamics Gordon Conference, 7/01; ESF workshop Understanding Chromosome Behavior, Germany; plenary speaker, 9/01; Seminars: Wistar Institute (3/01); MIT (5/01); Roswell Park (6/01);Vienna BioCenter (9/01); U of Chicago (10/01); U of WA (10/01); NYU (11/01)

2002: Molecular Mechanisms of DNA replication and recombination, Keystone symposium, 1/02; Chromatin Structure & activity, Keystone symposium, Santa Fe, NM, speaker and session chair, 1/02; , 3/02; American Soc Biochem and Mol Biol, Women in Science Symposium, New Orleans, LA, 4/02; FASEB yeast chromosome structure, Snowmass CO, 6/02; American Association Canc.Res., Telomeres and Telomerase in Cancer, CA, speaker and session chair, 12/02; Seminars: U of Cincinnati (5/02); Cellular and Molecular Pharmacology department at U-MDNJ-Medical School (5/02); U of Chicago (8/02); Duke U (9/02); U of PA, Abramson Family Can Res Inst. (9/02); National Human Genome Res Inst (10/02); Vanderbilt U (10/02); U of CA, Irvine (12/02)

2003: Cornell University, Women in Science panel, 3/03; CSH Telomere meeting, speaker and session chair, 5/03; Trinucleotide repeats Gordon Conference, Tuscany, Italy, 5/03; Plasmid and chromosome dynamics Gordon Conference, speaker and session chair, 8/03; International Replication, Recombination,

Repair Symposium, Japan, speaker and session chair, 11/03; Telomeres, Juan March Meeting, Madrid, Spain, speaker and session chair, 11/03; Seminars: Lawrence Berkeley Nat. Lab (1/03); UT Southwestern Medical School (1/03); Cornell U (3/03); Mt Sinai (5/03); Texas A&M (9/03); Medical U of S. Carolina (10/03); U of N. Carolina (10/03); Centro de Investigaciones Biológicas, Madrid (11/03); Thomas Jefferson (12/03); UC Santa Barbara (12/03)

2004: EMBO Harden Conference on Telomeres and Genome Stability, Cambridge UK, speaker and session chair, 4/04; NY Academy of Sciences Genome Integrity Meeting, 5/04; Nucleic Acids Gordon Conference, 6/04; EMBO workshop, Nuclear organization, Scloss Elmau, Germany, speaker and session chair, 10/04; AACR Telomeres and Telomerase in Cancer'', San Francisco CA, speaker and session chair, 11/04; Seminars: UCSF (1/04); Fred Hutchinson Can Res Cen (2/04); NYU, Distinguished Lecturer (9/04), Fox Chase Cancer Research Center (9/04); Harvard Medical School (11/04)

2005: Keystone Symposium, Mechanisms of DNA replication and recombination, speaker and session chair, 1/05; Blackburn Symposium, 2005 Franklin Medal in the Life Sciences, 4/05; CSH telomere meeting, speaker and session chair, 5/05; FASEB Genetic Recombination & Chromosome Rearrangements, Snowmass, CO, 7/05; International Conference of Yeast Genetics and Molecular Biology, Plenary speaker, Slovakia, 8/05; EMBO workshop, Chromosomal elements, Italy, speaker and session chair, 9/05; Mini-symposium, Genetic stability, Vermont Cancer Center, U of VT, 11/05; Seminars: Clare Hall Cancer Research UK (2/05); Cambridge University, England, women in science (2/05); London yeast meeting (2/05); University of Witten (2/05); Wellcome Trust Centre for Cell Biology, University of Edinburgh (3/05); Royal Society Athena Lecture, Royal Society (3/05); MRC, Lab of Molecular Biology, UK (3/05); Friedrich Miescher Institute, Switzerland (7/05)

2006: NY Academies of Science, Genome Integrity, 1/06; EMBO Recombination Mechanisms Seillac, France (cancelled), 5/06; RecQ helicases and other helicases in telomere maintenance, National Inst Aging (replaced by M. Mateyak), 5/06; Nucleic Acids Gordon Conference, speaker and session chair (cancelled), 6/06; Keynote speaker, Gender Equality Workshop, Kyoto Japan (cancelled), 7/06; Telomeres and Genome Stability, Villars-sur-Ollon, Switzerland (replaced by K. Daumer), 8/06; DNA replication, recombination, repair and the cell cycle, Warwick England (replaced by M. Sabourin) 9/06; Telomeres and Telomerase, Josef Steiner Cancer Foundation, Madrid Spain, speaker and session chair, 11/06; Seminars: U of WA Genome Sciences (2/06)

2007: CSH Telomere meeting, speaker and session co-chair, 5/07; Senescence, Aging and Cancer, Iowa St U, plenary speaker, 7/07; Gordon Research Conference, Chromosome dynamics, 8/07; AACR telomeres and telomerase (speaker and meeting co-chair), San Francisco,12/07; Seminars:Rockefeller U Yeast Club (12/07); U of IL (4/07); Mt. Sinai School of Medicine (5/07); University of Washington (10/07)

2008: EMBO DNA Recombination: from mechanism to inheritable human diseases, Italy, speaker and session chair, 5/08; FASEB yeast chromosome structure, AZ, speaker and session chair, 6/08; EMBO Conference Telomeres and the DNA Damage Response, Switzerland, 9/08; Seminars: Carnegie Institute (4/08), St. Jude's (2/08); U of KY, 4/08; Sloan Kettering Memorial (9/08)

2009: New York Academy of Sciences, Genome Integrity Meeting, 2/09; Chromosome Dynamics, Gordon Conference, Italy, 5/09; EMBO Conference Helicases and NTP-Driven Nucleic Acid Machines: Structure, Function and Roles in Human Disease, Switzerland, speaker and session chair, 6/09; XXIV International Conference on Yeast Genetics and Molecular Biology, Manchester England, plenary speaker, 7/09; Keystone Meeting, Telomere Biology and DNA Repair, Ashmore Australia, speaker and session chair, 10/09; Seminars: Ludwig Institute, UCSD (1/09);.U of Colorado Health Sciences Center (3/09); Seminars: Institut Curie, Paris 7/09; Duke U, 12/09

2010: AACR Telomerase and DNA Repair, TX, co-organizer, 02/10; EMBO conference Recombination and connections to SUMO and Ubiquitin modifications, Italy, 5/10; FASEB Yeast chromosome structure, AZ, 8/10; EMBO meeting Telomeres and Telomerase, Marseille France, 9/10; Sackler Symposium, Telomeres and Transposition, Irvine CA, speaker and session chair, 9/10; Seminars: Oxford U, 1/10; Cancer UK Lincoln Field Inns, 1/10; Washington U 2/10

2011: Armenia Molecular Biology Meeting, Keynote speaker, Erevan (cancelled), 1/11; NYAS, Genome Integrity Meeting speaker, 4/11; American Society Microbiology National Meeting, Symposium speaker, 5/11; Chromatin, replication, and chromosomal stability, Stockholm Sweden, 6/11; FASEB helicase meeting, CO, speaker and session chair, 7/11; FASEB Genetic recombination and genome rearrangements, CO, speaker and session chair, 7/11; Chromosome Dynamics Gordon Conference, speaker and session chair, 7/11; Next 20 years of telomere research, Madrid Spain, speaker and discussion leader, 11/11; Seminars: NYAS 4/11; UCSF Helen Diller Family Comprehensive Cancer Center 6/11; Center for Advanced Biotechnology and Medicine Rutgers, 11/11
2012: Telomere dynamics, Keynote speaker, Israel, 1/12; Gordon Conference, DNA Damage, Mutation & Cancer, Ventura CA, 03/12; EMBO Workshop Recombination Mechanisms and Genome Instability, Jerez de la Frontera, Spain, Session chair and speaker; 05/12; Co-chair FASEB Yeast chromosome structure and cell cycle, 7/12; Session Chair, GSA Yeast Genetics and Molecular Biology Mtg, 8/12; EMBO meeting Telomeres and the DNA Damage Response, Isle sur la Sorgue, France, 10/12; Seminars: Salk Institute 2012; Beckman Research Institute of the City of Hope, 2012; Fred Hutchinson Cancer Res. Cen; Taiwan, Institute Molecular Biology Academia Sinica and National Taiwan U of 4/12; Cornell U, 9/12; NYU, Biology 10/12; 2012 Magni Lecture, Milan IT, 10/12
2013: FEBS/EMBO Genetic instability and consequences, Armenia (cancelled); Session chair and speaker, Keystone DNA Replication and Recombination meeting, Banff Canada, 3/13; American Society for Biochemistry and Molecular Biology, ASBMB, Annual Meeting plenary lecture and session chair, 4/13; Joe Gall 85th birthday symposium, 4/13; CSH telomere meeting, 5/13; 2013 Chromosome Dynamics Gordon Conference, Session chair and speaker, 5/13, Il Ciocco, Italy; 4th International Meeting on Quadruplex Nucleic Acids, Singapore, 5/13 (declined); FASEB Genetic Recombination and Genome Rearrangements, CO 7/13; Helicases and nucleic acid translocases, Cambridge U, UK, 8/13; Session chair and speaker CSH DNA replication meeting (declined); NYAS, speaker 10/13; Seminars: National Institutes of Aging, Speaker Annual NIA IRP Postbac Day, April 2013; Seminar Gulbenkian foundation, Portugal, 6/13; Stanford U 13 Chemical and Systems Biology 6/13, U Texas, Austin 9/13; NYU Genomics 9/13; University of PA, 10/13; Cancer Institute NJ 12/13
2014: 1st Institute Basic Science Molecular Biology Symposium, Seoul, Korea, 2/14:organizer and speaker DNA Replication, Recombination and Repair Theme of 2014 ASBMB meeting; CSH Cell Cycle Meeting, Session chair and speaker, 5/14 (declined); ABCAM "Mechanisms of Recombination: 50th Anniversary Meeting of the Holliday Model", Alicante Spain, 5/14 (cancelled due to illness); DNA metabolism Symposium, Wenner-Gren Center, Stockholm, Sweden, 5/14 (declined); Life Science Symposium 2014 Understanding and countering the causes of ageing Leiden, The Netherlands, 5/14 (declined); GRC: Mutagenesis: Changes to the Genetic Landscape, Catalonia, Spain, 6/14; FASEB Yeast chromosome structure replication and segregation, 7/14; Speaker, CINJ mini-symposium Metabolic regulation of DNA damage and repair 8/14; CSH guest lecturer yeast course, 8/14; Keynote speaker, Annual meeting Swedish Society Biochemistry, Biophysics and Molecular Biology, Marstrand, Sweden, 9/14 and Panel member, Scientific Careers; Plenary speaker and session leader, DNA Replication as a Source of DNA Damage: From Molecules to Human Health, Casablanca, Morocco, 9/14; Session leader and speaker, When RNA meets DNA: on the road to genome instability, Baeza, Spain, 11/14; Seminars: U of WA, Genome Sciences, 2/14; Emory U 10/14; U of Toronto, 10/14
2015: Session chair and speaker CSH Telomere meeting, 5/15; 80th Cold Spring Harbor Laboratory Symposium on Quant Biol on 21st Century Genetics, 5/15; Quadruplex Meeting, 5/15, Bordeaux, France (declined); Keynote speaker, GRS for Chromosome Dynamics GRC, 6/15; Session chair, Chromosome Dynamics GRC, 6/15; speaker, FASEB conference on Genetic Recombination and Genome Rearrangements, 7/15; Session chair and speaker, FASEB Helicase meeting, 7/15; Session chair and speaker, CSH DNA Replication and Genome Integrity Meeting, 9/15; EMBO Workshop on Telomeric Chromatic and Telomere Fragility, Singapore, 12/15; Seminars: Stowers Institute, 9/15
2016: featured speaker, EMBO conference Telomeres, Telomerase and Disease, 4/16; At the intersection of DNA replication and genome maintenance, International Centre for Genetic Engineering and Biotechnology Trieste Italy 6/16, FASEB Yeast Chromosome Structure, Replication and Segregation

(declined), 7/16; Session chair and speaker, FASEB Dynamic DNA Structures in Biology", 7/16; Gordon Conference Hong Kong, Genomic Instability, 7/16 (declined); 2016 Cold Spring Harbor Asia Conference, Telomeres and telomerase, Suzhou, China 9/16 (declined); Administration of the President of Armenia: Armenian scientists in the diaspora, 9/16 (declined); **Seminars**: Yerevan State U; Institute of Molecular biology of NAS, Armenia 5/16 (invited by Armenian National Young Scientists' Program under the auspices of the President of the Republic of Armenia); U of Michigan, Mol. Cell. and Dev. Biology, 9/16; U of Basel, grad school lecture on telomeres in the Functional organization of the Cell Nucleus, 11/16; Friedrich Miescher Institute for Biomedical Research, Basel Switzerland. 11/16.
2017: Keystone Symposia on Genomic Instability and DNA Repair/DNA Replication and Recombination, 4/17; Gordon Conference Chromosome Dynamics, Barga IT 5/17; Nucleic Acids Gordon Conference, speaker and session chair, 6/17; FASEB conference on Genetic Recombination and Genome Rearrangements, 7/17; **Seminars:** Center for Integrative Genomics of the University of Lausanne, Switzerland, 3/17; Department of Microbiology and Immunology Columbia University, 1/17; Center for Integrative Genomics of the University of Lausanne, Switzerland, 3/17; Yale University, Department of Cell Biology 5/17; Department Biological Sciences, Vanderbilt U 4/17; Distinguished speaker, Pelotonia Symposium, Cancer Research program, Ohio State U, 10/17; CNIO, Madrid Spain, 10/17
2018: FASEB conference on Dynamic DNA Structures in Biology, 7/18; FASEB Conference on Yeast Chromosome Biology and Cell Cycle 7/18, Steamboat Springs, CO; Keynote speaker, Stupka Research Symposium, Biochemistry and Biophysics, Iowa State U, 2018; Keeping the peace between RNA and DNA, Mainz, Germany; 10/18; Featured speaker, CSHA Telomeres and Telomerase, China Institute of Molecular Biology, 10/18 (declined); **Seminars:** Northwestern U Medical School, 4/18; Yale U 5/18
2019: FASEB Helicase meeting

POST-DOCTORAL TRAINEES FROM ZAKIAN LAB: (*under represented minority)

1. Gunther Roth, PhD 1977 at U. of Munich with Dr. K. Moritz; post doc 1980-82, supported by Deutsch Forschungsgemeinschaft, 1980-82; tenured faculty, Institut fur Genetik, Freie U., Berlin.
2. Ginger M. Dani (Reddington), PhD 1980 at U. of Minnesota with Dr. T.C. Spelsberg; post doc 1981-85; ACS fellowship, 1983-85; Vice President of Operations, DiagXotics, Wilton, CT.
3. Michael N. Conrad, PhD 1982 at U. of Iowa with Dr. C.S Newlon; postdoc 1982-90; supported by ACS 1983-85; Senior Research Scientist; Oklahoma Medical Research Foundation, Oklahoma City, OK.
4. Rosemary Sweeney, PhD 1982 at U. of Colorado with Dr. L. Gold; postdoc 1983-86; supported by NIH Training Grant "Genetic Approaches to Aging"; Senior Counsel, Amgen.
5. Daniel E. Gottschling, PhD 1984 at U. of Colorado with Dr. T. Cech; postdoc 1984-89; supported by ACS, NIH fellowships, 87-89; Faculty U of Chicago, 89-96; tenured faculty, Division of Basic Sciences, Fred Hutchinson Cancer Res. Cen.
6. Kurt W. Runge, PhD 1984 at MIT with Dr. P.W. Robbins; postdoc 1985-93, supported by ACS and NIH fellowships 1985-88; tenured faculty, Cleveland Clinic, 8/93 to date.
7. Raymund Wellinger, PhD 1986 at Swiss Institute for experimental Cancer Research, Lausanne with Dr. H. Digglemenn; postdoc 1986-93; supported by a grant from the Swiss National Science Foundation, 1986-89; tenured professor and named chair, Sherbrooke U., 2/94.
8. Sy-Shi Wang, PhD 1988 at UMDNJ Medical School with Dr. M. Brandriss; postdoc 1988-91, supported by Jane Roberts Taylor Guild Fellowship, 1988-89; Executive Director, Clinical Operations, Acucela Inc.
9. Jeffrey Stavenhagen, PhD 1989 at Columbia U with Dr. D. Robins; postdoc 1990-96; supported by NIH Postdoctoral Fellowship, 1990-1993; faculty, Dayton U 7/96-00; Head of Biologics Department, H. Lundbeck A/S, Denmark.
10. Vincent Schulz, PhD 1990 at U. of Wisconsin with Dr. W. Reznikoff; postdoc 1990-96, supported by NIH training grant to the University of Washington (1990-92); ACS postdoctoral fellowship (1993-

95); project leader and staff scientist Genaissance Pharmaceuticals; Associate Research Scientist, Yale U School of Medicine.

11. Jing-Jer Lin, Ph.D. 1992 at U. of North Carolina with Dr. A. Sancar; postdoc 7/92-7/96; supported by Damon Runyon-Walter Winchell postdoctoral fellowship; tenured and chair Biochemistry, National Taiwan University College of Medicine, Taiwan.
12. Ellen Monson, PhD 1993 at UC San Diego with Dr. D. Helinski; postdoc 5/94-12/99; NIH postdoctoral fellowship; Senior Vice President, Bexion Pharmaceuticals.
13. Robert Corell, PhD 1990 at Dartmouth College with Dr. R. Gross; postdoc 5/94-8/96; high school chemistry teacher, Princeton, NJ.
14. Derik de Bruin, PhD 1993 at Cornell U Grad. School of Med. Sci. with Dr. J. Ravetch; postdoc 9/94-7/97; ACS postdoctoral fellowship; Senior Research Analyst, Bank of America/Merrill Lynch.
15. Catherine Freudenreich, PhD 1994 at Duke U with Dr. K. Kreuzer; postdoc 7/95-6/99; NIH postdoctoral fellowship; tenured Professor, Tufts U.
16. Charles Epstein, PhD 1993 at Rockefeller U with Dr. Fred Cross; postdoc 8/95-8/96; Damon-Runyon and NIH postdoctoral fellowship; Team Leader, Epigenomics, Broad Institute.
17. Haiyan Qi, PhD 1996 at New York Medical College with Dr. Yuk Ching Tse-Dinh; postdoc 7-96-01, supported by NIH training grant 11/96- 3/98, NIH postdoctoral fellowship, 4/98-10/98, DOD Breast cancer postdoctoral fellowship 10/98-01; Researcher, Wuxi Hegu Pharmaceuticals.
18. Andrew Taggart, PhD 1996 at Pennsylvania State U. with Dr. F. Pugh; postdoc, 9/96-03; Susan G. Komen Breast Cancer Foundation postdoctoral fellowship; Senior investigator, Novartis.
19. Andreas Ivessa, PhD 1996 at U of Technology, Graz, Austria with Dr. S. Kohlwein; postdoc 1/97-10/04; Erwin Schrodinger postdoctoral fellowship, Leukemia & Lymphoma Society Special Fellow Award, 7/01-6/04; faculty, UMDNJ.
20. John (Shu-Chun) Teng, PhD 1996 at Rutgers U. with Dr. Abram Gabriel; postdoc 1/97-7/00, DOD Breast cancer postdoctoral fellowship; tenured faculty, Department Microbiology, National Taiwan University, Taiwan.
21. Jin-Qiu Zhou, PhD 1997 at U of Miami School of Medicine with Drs. A. So and K. Downey; postdoc 7/98 –8/01; tenured Professor Chinese Academy of Sciences, Max Planck Insitute, Shanghai China.
27. Yasumasa Tsukamoto, PhD at U of Tokyo 1997 with Dr. H. Ikeda; post doc 10/98 –3-01, fellowship from Japan Society for Promotion of Science; faculty Iwate College of Nursing, Japan.
28. Brian Lenzmeier, PhD 1998 at Colorado State U with Dr. J. Nyborg; 1/99-03, ACS postdoctoral fellowship; tenured faculty Biology Buena Vista U.
29. *Leticia Vega, PhD 1998 at MIT with Dr. F. Solomon; post doc 2/99- 12/04; Helen Hay Whitney postdoctoral fellowship; tenured faculty Barry U.
30. Rong Jiang, PhD 1997 at Columbia U with Dr. M. Carlson; Damon Runyon postdoctoral fellowship, 5/99- 10/00; Wall St.
31. Maria Mateyak, PhD 2000 at Brown U with Dr. J. Sedivy; postdoc 9/00- 7/07, Damon Runyon postdoctoral fellowship; Research Teaching Specialist, UMDNJ.
32. Timothy Fisher, PhD 2002 at Albert Einstein College of Medicine with Dr. V. Prasad; postdoc 3/02-7/05, NIH cancer training grant 02-03, Leukemia & Lymphoma Society Postdoctoral fellowship; Global Lead, Immuno-Oncology / Oncology, Search & Evaluation at Bristol-Myers Squibb.
33. Jean-Baptiste Boule, PhD 2002 at Universite Paris with Dr. Francois Rougeon; post doc 5/02-11/07, Fellowship Assoc. de la Recherche Contre le Cancer, NJCCR postdoctoral fellowship; Research Scientist, National Museum of Natural History, Paris.
34. Benjamin Wardleworth, PhD 2002 at Dundee U with Dr. Malcolm White; post doc 7/02-6/04,Wellcome International Research fellowship; in 2011: chartered accountant PwC
35. Michelle Sabourin, PhD 2001 at Vanderbilt U with Dr. N. Osheroff; post doc 7/02- 4/08; NIH postdoctoral fellowship; Staff Scientist, Life Technologies.
36. Stephen Dunaway, PhD 2004 at Rutgers U with Dr. N. Walworth; post doc 2/04-05; supported by NCI training grant; NJ Commission on Cancer Research postdoctoral fellowship; tenured faculty, Drew U.

37. Sarah Aubert, PhD 2004 at Texas A&M with Dr. F. Raushel; postdoc 9/04-1/09; Researcher, Janssen R&D.
38. Chris Webb, PhD 2004 at Case Western U with Dr. J. Wise; post doc 10/04-12; NIH and American Cancer Society postdoctoral fellowships; staff scientist Zakian lab, 2013- 3/17; currently Dupont scientist
39. *Creighton Tuzon PhD 2004 at U of Colorado Health Sciences Center with Dr. J. Cooper; post doc 11/04-8/09; NSF postdoctoral fellowship; named ACS postdoctoral fellowship; Research Associate, U of Southern California.
40. Xi Ai, PhD 2004 at Ohio State U with Dr. Mark Parthun; post doc 6/05-1/07; Associate Principle Scientist, Merck Research Labs
41. Iris Cheung, PhD 2005 at U British Columbia with Drs. A. Rose and P. Lansdorp; post doc 8/05-08; Canadian Institutes of Health Research (CIHR) postdoctoral fellowship, Next-Generation Sequencing Specialist, Eurofins MWG Operon; as on 2015: Business development manager Dalton Pharma Services.
42. Yun Wu, PhD 2006 at U of CA Davis with S. Kowalczykowski; post doc 2006-12, Damon-Runyon Postdoctoral fellowship; Scientist, Pharmaceutical Sciences, Protein Potential LLC.
43. Katrin Paeschke, PhD 2006 at U Witten, Germany with Dr. H. Lipps; post doc 2007-12; Deutsche Forschung Gesellschaft postdoctoral fellowship, NJCCR postdoctoral fellowship; received one of two Emmy Noether Award from the DFG (Deutsche Forschungsgemeinschaft): support as independent investigator for five years at any German university, junior group leader, Department of Biochemistry, University of Wuerzburg; 2016: group leader European Research Institute for the Biology of Aging (ERIBA), University Medical Center Groningen, Netherlands
44. Nasim Sabouri, PhD 2008 at Medical Biochemistry and Biophysics, Umeå U Sweden with Dr. Erik Johansson; post doc 2008-12, Wennergren fellowship, Svenska Sällskapet för Medicinsk Forskning (SSMF, Swedish society for medical research); tenure track faculty, Medical Biochemistry and Biophysics, Umeå U, Sweden
45. Matthew Bochman, PhD 2008 at U of Pittsburgh with Dr. A. Schwacha; post doc: 1/09-7/13, American Cancer Society postdoctoral fellowship, tenure track faculty Indiana U, 8/13-
46. Chi-Fu Chen, PhD 2010 at Rutgers U with Dr. S. Brill; post doc 2/11- ; NJCCR postdoctoral fellowship, 12/12-11/14
47. Kah Wai Lin, MD, PhD; PhD in 2012 at Karolinska Institute Sweden with Dr. S. Souchelnytskyi; postdoc 4/12-4/16; self-employed.
48. Phong Lan Thao Tran, PhD 2012 at ARNA Lab-INSERM, Institut Européen de Chimie et Biologie, France with Dr. Jean-Louis Mergny; postdoc, 9/12-17, EMBO long term fellowship, 9/12-14, NJCCR post-doctoral fellowship, 2015-17; currently research associate National Museum of Natural History, Paris.
49. Lindsey Williams, PhD 2012 at U of WA with Dr. B. Preston; post doc fellow, 5/13-5/15; Scientist, Ariosa Diagnostics.
50. Cindy Follonier, PhD 2012 at Institute of Molecular Cancer Research. U of Zurich, Switzerland with Dr. Massimo Lopes; post doc, 5/13-4/18, EMBO long term fellowship, 13-15; Swiss NSF fellowship, 8/15-7-17
51. *Thomas Pohl, PhD 2013 at U of WA with Dr. B. Brewer; post doc, 1/14- ; Ford Foundation post doctoral fellowship; Burroughs Welcome Postdoctoral enrichment program; finalists for Life Science Research Foundation grant

GRADUATE STUDENTS TRAINED IN ZAKIAN LAB (*under-represented minority)

1. Ann F. Pluta, Graduate Student in Pathology at U. of Washington supported by Molecular Training in Cancer Research, training grant: post doc with Dr. W. Earnshaw, Johns Hopkins U (88-95); Scientific Communications Editor, NCI.
2. Jocelyn Wright, Graduate Student Pathology U. of Washington, 1988-93; postdoc 1993-97 with Dr. E. Krebs, U. of Washington; Freelance Science Writer, bio-link.org.

3. Lisa Sandell, Graduate student Pathology U. of Washington, 1989-94; postdoc 1994-04 with Dr. S. Tilghman, Princeton U; tenure track faculty U of Louisville.
4. Emily Wiley, Graduate Student Pathology, U. of Washington, 1991-96; post doc, D. Allis, U of Rochester, 10/96-00; tenured faculty Joint Science Program Claremont Colleges.
5. Brenda Bourns, Graduate Student Pathology, U. of Washington, 1992-97; post doc1998 with Dr. A. Clowes, U of WA; faculty Seattle University.
6. Satkunanathan Balakumaran, Graduate Student, Interdisciplinary Molec. Cell. Biol. Program, U. of Washington, 1993-95; Graduate Student, Princeton U., 1995-00; post doc Dr. H. Willard, Duke U; Research Scientist, Duke Medical Center.
7. Mary Kate Alexander, graduate student, Princeton U 6/97-9/02; Howard Hughes graduate fellowship; post doc B. Panning, UCSF; Senior Research Associate, Microbial Pathogenesis, Genentech.
8. Wai-Hong Tham, graduate student, Princeton U 6/97-8/01; Princeton U teaching award; post doc with A. Amon, MIT; tenure track faculty, Walter and Eliza Hall Institute of Medical Research.
9. Jessica Bessler, graduate student, Princeton U 6/99 -1/03; Pre-doctoral fellowship, NJ Commission on Cancer Research, 7/01-6/03; post doc with A. Villeneuve, Stanford U; 9/10 Associate Scientific Director, Health Interactions.
10. *Jorge Torres, graduate student, Princeton U 6/99 -12/03; Princeton U teaching award; post doc Genetech, tenured faculty Department Biochemistry UCLA
11. Lara Goudsouzian, graduate student, Princeton U, 9/00 to 11/05; faculty Raritan Valley Jr. College
12. Michelle Mondoux, graduate student, Princeton U, 6/01-5/07; NSF predoctoral fellow; Thomas J. Silhavy award. Princeton U teaching award; post doc NIH M. Krause; tenured faculty, College of the Holy Cross.
13. Stefan Pinter, graduate student, Princeton U., 6/02-1/08; Susan G. Komen Breast Cancer Foundation predoctoral fellowship; post doc Jeannie Lee, Harvard Med School; faculty member Genetics and Genome Sciences*;* U of CT Medical School.
14. Kathleen Daumer, graduate student Princeton U, 6/02-4/07; NJ Commission on Cancer Research pre-doctoral fellowship, Princeton U teaching award, Systems Engineer, AT&T Government Solutions.
15. Anna Azvolinsky, graduate student Princeton U, 6/04-11/09; post doctoral fellow, John Petrini, Sloan Kettering; 2011: free-lance science journalist
16. Jane Phillips, graduate student Princeton U, 6/04-5/09, 2005 Princeton U teaching award; NJCCR pre-doctoral fellowship, 2006-08; Associate Medical Director, Complete Healthcare Communications.
17. Marina Paul, graduate student, Princeton U, 11/06-9/10; Senior Medical Editor, Elsevier.
18. Karin Rainey McDonald, graduate student Princeton U, 5-07-9/12; NJCCR pre-doctoral fellowship; currently lecturer Princeton U;
19. Jean Suh McGee, MD-PhD, 7/07-8/10, NJCCR fellowship; NIH fellowship; 2013: currently tenure track in Dermatology, Boston U Medical School.
20. Jennifer Stundon, MD-PhD, 8/09 -3/14, NIH fellowship; resident pediatric oncology
21. Shelly Lim, Princeton U graduate student, 6/10-9/15, post doc Sloan Kettering; currently Complete Healthcare Communications.
22. *Patricia Daniela Garcia, Princeton U graduate student, 6/12-
23. *Carly Geronimo, Princeton U graduate student, 6/13-; NSF pre-doctoral fellow
24. *Kinnari Matheson, Princeton U graduate student, 12/14-18 (co-mentored with Dr. A. Gammie)

UNDERGRADUATE RESEARCH STUDENTS TRAINED IN ZAKIAN PRINCETON LAB

(Unless otherwise indicated from Princeton U; * under-represented minority):

1. Taryn Phippen, 1996, “An analysis of recombination between internal tracts of yeast telomeric DNA”; PhD, Cell and Molecular biology, U of WA
2. Sara M. Kantrow, 1997, “The triplet repeat CTG can expand in yeast and increases direct repeat recombination in a length dependent manner; NJCCR Summer Fellowship, graduated with highest

honors; Phi Beta Kappa, awarded McCracken Senior Thesis Prize for inventiveness and technical accomplishment; Vanderbilt Medical School

3. Andrew M. Smith, 1997, "An Examination of protein-telomere interactions *in vivo* using a one hybrid-system; Phi Beta Kappa, graduated with high honors; Northwestern Medical School
4. Heather H. Cheng, 1998, "A screen to find genes that affect the stability and fragility of CTG trinucleotide repeats; NJCCR Summer Fellowship; MD-PhD U of WA
5. Jonah S. Marshall, 1998; "Testing *in vitro* and *in vivo* protein-protein interactions of the RRM3 and PIF1 helicases; U Rochester Medical School
6. Claire Dunne, 1999; "An investigation of the role of Cdc13p at the telomere in *S. cerevisiae*"; graduated with honors; MD-PhD at Cornell Medical.
7. Bradley (Scott) McCowan, 1999; "Characterization of the role of *RIF1* and *RIF2* in telomere formation in *Saccharomyces cerevisiae*; graduated with honors, Squibb and Sons Senior Thesis prize, class day speaker; Emory Medical School.
8. Amy D. Vassalotti, 2000; "Screening for genes associated with CTG trinucleotide repeat fragility and instability in yeast"; teacher with Americorp, Harvard School Public Policy
9. Jason Chang, 2000; "Characterization of roles of *RIF1*, *RIF2*, *RAD50*, and *RAD51* in survivor formation in telomerase-minus *Saccharomyces cerevisiae*; graduated with high honors; NYU Med. School.
10. Joanna Byar, 2001; "Purification and characterization of recombinant yeast Pif1p"; grad stud, NYU
11. Alfred Garfall, 2002; "Mutational analysis of Rrm3p, a helicase that affects replication of ribosomal DNA and telomeres"; graduated with honors; NYU medical school.
12. Alicia Jacob-Zysman, 2003; Identification and characterization of interactors with Rrm3p; U of Rochester Med School.
13. Jillian Godfrey, 2004; Determination of the relationship between peripheral localization, gene silencing, and telomere length in *S. cerevisiae*, Associate consultant, Trinity Partners, Boston MA
14. Lauren Marlowe, 2004; Characterization of RIF1 and RIF2 in telomere length regulation and DNA damage response; graduated with high honors; NIH Academy fellowship program; U PA med school
15. *Tolu Onigbanjo, 2005; The role of Pif1p in exacerbating telomere end protection in *S. cerevisiae*; tenure track faculty NJCCR Summer Fellowship; George Washington U medical school
16. Adam Castaño, 2005; The end is near: the role of the Cdc13p-Stn1p-Ten1p complex in telomere length regulation and chromosome end protection; NIH Academy fellowship program; U of MI medical school.
17. Nazli Sedighi Hashjin, 2006, visiting student from Karolinska Institute, graduate student Sweden
18. Amy Wasterlain, 2007, NJCCR Summer Fellowship, graduated with high honors, Consultant NYC
19. *Sandra Nweke, Dillard University, worked in lab summer 2006, part of PCCM (Princeton Center for Complex Materials) REU (Research Experiences for UG) program
20. Keren Glinert, 2008, NJCCR Summer Fellowship, working as lab tech U of Chicago
21. *Annika Windon, 2008, Minority Supplement to NIH grant, Role of Stn1p and Ten1p in telomere protection in *S. cerevisiae*, Meharry Medical School
22. Jeremy Amon, Princeton U 2009, NJCCR fellowship, NSF fellow in Graduate School U of CA at Berkeley
23. *DeMario Butts, Morehouse class 2010, worked in lab summer 2008
24. *Christian Windon, Princeton U 2010, medical school
25. *Amir-Arsalan Safaai-Jazi, Virginia Tech, summer 2011
26. *Joanna Blanco, St. Peters College, class of 2012, summer student
27. Colleen Judge, Princeton U, class 2011, graduated with high honors, Sigma chi; Research Tech. Medical School
28. *Patricia Daniela Garcia , UTEP, class 2011, summer student 2010; graduate student Princeton U
29. *Jonathan Jackson, Princeton U, class of 2013, Research tech and then dental school
30. Daniel Cohen, class of 2013, graduated magna cum laude, working in business
31. *Aleeson Eka, class of 2014, U of PA, MS program; USC medical school 2016-

32. Greg Kazarian, class of 2014, graduated with high honors, Sigma Chi; working as consultant
33. Jeffrey Wu, class of 2015
34. Linda Vo, class of 2015
35. *Elshaddai Ephrem, class of 2016, graduated with honors, Department Thesis Prize; U of PA medical school
36. Emilee Tu, Class of 2016, graduated with honors
37. Adam Wang, Class of 2018
38. Wolfgang Beck, Class of 2018

VISITING SCIENTISTS

1. Dr. Gunther Roth, Institut fur Genetik, Freie U., Berlin; Summer 1984.
2. Dr. James L. Hartley, Staff Scientist Bethesda Research Laboratory; Summer 1984.
3. Dr. Bjarne Juul Bonven, Assistant professor U. of Aarhus, Aarhus, Denmark; 12/90 - 12/91.
4. Dr. Motoko Shibanuma, Department of Microbiology, Showa U., Tokyo, Japan; 8/94-3/95
5. Dr. Yoshinori Yamashita, Tokyo Research Labs, Kyowa Hakko Kogyo Co., 9/95-1997
6. Visiting graduate student Enea Di Domenico, from Dr. F. Ascenzioni, Development and Cellular Biology, University of Rome, Italy, 4/08-; U of Oxford, 2015
7. Visiting graduate student, Anna Traczyk, PhD candidate NTU School of Biological Sciences, Singapore, 2017-18

PUBLICATIONS

1. Zakian VA. (1976) Electron microscopic analysis of DNA replication in Drosophila virilis. *J. Mol. Biol.* **198**: 305-331.

2. Zakian VA, Brewer BJ and Fangman WL. (1979) Replication of each copy of the yeast 2 micron DNA plasmid occurs during the S phase. *Cell* **17**: 923-934.

3. Brewer BJ, Zakian VA and Fangman WL. (1980) Replication and meiotic transmission of yeast ribosomal RNA genes. *Proc. Natl. Acad. Sci. USA* **77**: 6739-6743. PMC350364

4. Brewer BJ, Zakian VA, Nelson RG and Fangman WL. (1981) Replication and inheritance of the ribosomal RNA genes and the 2μm plasmids. In: *Molecular genetics in yeast*. von Wettstein D, Friis J, Kielland-Brandt M, Stenderup A, eds. Copenhagen: Munksgaard, pp. 21-34.

5. Rabek J, Zakian VA and Levine AJ. (1981) The SV40 A-gene product suppresses the adenovirus H5ts125 defect in DNA replication. *Virology* **109**: 290-302.

6. Zakian VA. (1981) The origin of replication from Xenopus laevis mitochondrial DNA promotes high frequency transformation of yeast. *Proc. Natl. Acad. Sci. USA* **78**: 3128-3132. PMC319513

7. Zakian VA, Wagner DW and Fangman WL. (1981) Yeast double-stranded RNAs are synthesized during the G1 phase but not the S phase of the cell cycle. *Mol. Cell. Biol.* **1**: 673-679. PMC369347

8. Fangman WL and Zakian VA. (1982) Genome structure and replication. In: *The molecular biology of the yeast Saccharomyces cerevisiae*. Broach J, Jones E, Strathern J, eds. Cold Spring Harbor, NY, pp. 27-58.

9. Zakian VA and Kupfer DM. (1982) Replication and segregation of an unstable plasmid in yeast. *Plasmid* **8**: 15-28.

10. Zakian VA and Scott JF. (1982) Construction, replication and chromatin structure of TRP1 RI Circle: A multiple copy synthetic plasmid derived from yeast chromosomal DNA. *Mol. Cell. Biol.* **2**: 221-232. PMC369780

11. Dani GM, Pluta AF and Zakian VA. (1983) Termini from macronuclear DNA of ciliated protozoans can provide telomere function for yeast plasmids in mitosis and meiosis. In: *Mechanisms of DNA*

replication and recombination. Cozzarelli NR, ed. UCLA Symp Molec. Cell. Biol., Vol. 10. NY: AR Liss, pp. 553-562.

12. Dani GM and Zakian VA. (1983) Mitotic and meiotic stability of linear plasmids in yeast. *Proc. Natl. Acad. Sci. USA* **80**: 3406-3410. PMC394052
13. Roth GE, Blanton HM, Hager LJ and Zakian VA. (1983) Isolation and characterization of sequences from mouse chromosomal DNA with ARS function in yeast. *Mol. Cell. Biol.* **3**:1898-1908. PMC370056
14. Zakian VA. (1983) Control of chromosome behaviour in yeast. *Nature* **305**: 275.
15. Pluta AF, Dani GM, Spear BB and Zakian VA. (1984) Elaboration of telomeres in yeast: Recognition and modification of termini from Oxytricha macronuclear DNA. *Proc. Natl. Acad. Sci. USA* **81**: 1475-1479. PMC344859
16. Zakian VA. (1984) Architecture of interphase nuclei. *Nature* **308**: 406.
17. Zakian VA. (1985) Nuclear structure. Taken with a grain of salt. *Nature* **314**: 223-224.
18. Zakian VA, Blanton HM and Dani GM. (1985) Formation and stability of linear plasmids in a recombination deficient strain of yeast. *Curr. Genet.* **9**: 441-445. PMID: 3916729
19. Zakian VA, Blanton HM, Wetzel L and Dani GM. (1986) A size threshold for yeast chromosomes: Generation of telocentric chromosomes from an unstable minichromosome. *Mol. Cell. Biol.* **6**: 925-932. PMC367593
20. Gottschling DE and Zakian VA. (1986) Telomere Proteins: Specific recognition and protection of natural termini of Oxytricha macronuclear DNA. *Cell* **47**: 195-205. PMID: 3094961
21. Zakian VA, Blanton HM and Wetzel L. (1986) Distribution of telomere- associated sequences in yeast. In: *Extrachromosomal Elements in Lower Eukaryotes*. R Wickner, A Hinnebusch, L Mets. A Labinowitz, IC Gunsalus, A Hollaender, eds. Plenum Press, NY, pp. 493-498. PMID:3551920
22. Zakian VA. (1987) Ciliates. *Science* **237**:305 (Book review).
23. Conrad MN and Zakian VA. (1988) Plasmid associations with residual nuclear structures in *Saccharomyces cerevisiae*. *Curr. Genet.* **13**: 291-297. PMID: 2839303
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Patents:

"Modulation of *PIF1*-type helicases", Serial #08/086,993; filed 7/93; issued 1/95; V. Zakian and V. Schulz, co-inventors;

“Telomere maintenance assays”, Serial #6025135; filed 5/97; issued 2/00; R. Wellinger and V. Zakian, co-inventors