Curriculum Vitae

ARNOLD GREGORY MATERA

University of North Carolina
Biological & Genome Science Program (iBGS) Citizenship: U.S.A.
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Research Interests

Epigenetic Control of Gene Expression; RNA Processing; Spinal Muscular Atrophy; Nucleocytoplasmic Transport; Nuclear Organization

Education

1984 Bachelor of Arts, University of Colorado at Boulder
Dual Major: Departments of Chemistry and Molecular, Cellular & Developmental Biology

1990 Doctor of Philosophy, Biophysical Chemistry, University of California at Davis
Dissertation: Transcription and Transposition of Repetitive DNA in Higher Primates

Professional and Research Experience

1984–1990 **Graduate Student**, Department of Chemistry, University of California at Davis. Advisor: Dr. Carl W. Schmid

1990–1993 **Postdoctoral Fellow**, Damon Runyon Cancer Research Fund, Departments of Genetics and Molecular Biophysics & Biochemistry, Yale University School of Medicine. Advisors: Drs. David C. Ward & Joan A. Steitz

1994–2000 **Assistant Professor**, Department of Genetics, Case Western Reserve University School of Medicine

1995–2007 **Member**, Center for Human Genetics, Center for RNA Molecular Biology Case Comprehensive Cancer Center and Program in Cell Biology, Case Western Reserve University School of Medicine

1995–2002 **Director**, Digital Imaging Facility, Reinberger Laboratories for Molecular Cytogenetics, Department of Genetics, Case Western Reserve University

2000–2005 **Associate Professor** (with Tenure), Department of Genetics, Case Western Reserve University

2003 **Visiting Professor**, Wellcome Trust Biocentre, Department of Biochemistry, University of Dundee, Scotland. Sabbatical Host: Dr. Angus I. Lamond

2004–2007 **Director**, Graduate Program in Genetics, Case Western Reserve University, School of Medicine

2005–2007 **Professor**, Department of Genetics, Case Western Reserve University, School of Medicine

2007–present **Professor**, Departments of Biology and Genetics, RNA Discovery Center, Lineberger Comprehensive Cancer Center, College of Arts & Sciences and School of Medicine, University of North Carolina at Chapel Hill

2013–2020 **Associate Chair for Research and Facilities**, Department of Biology, University of North Carolina at Chapel Hill

2023–present **Director**, Integrative Program for Biological and Genome Sciences, School of Medicine, University of North Carolina at Chapel Hill

Professional Affiliations

1994–present The RNA Society
2006–present Genetics Society of America
2021 RNA Society Council Member
2019 & 2020 Elected to Board of Directors of the RNA Society
1994–2019 American Society for Cell Biology
2001–2002 American Society of Human Genetics
2023–present American Association for the Advancement of Science
1990–2000 American Association for the Advancement of Science
1986–1999 American Society for Microbiology

Academic Honors

2017 Instructor, Study Abroad Program, Université Grenoble Alpes, France
2006 Faculty of the Year Award, CWRU Genetics Student Colloquium
2001 The *Journal of Cell Biology* Lectureship, Deutsche Gesellschaft für Zellbiologie (German Society for Cell Biology), Germany
1996 Faculty Mentorship Award, CWRU Genetics Student Colloquium
1995–1998 American Cancer Society Junior Faculty Award
1995–1997 March of Dimes Basil O'Connor Scholar Award
1991–1993 Damon Runyon-Walter Winchell Cancer Fund Postdoctoral Fellowship
1987–1988 NIH Cell and Molecular Biology Predoctoral Traineeship, UC Davis
1987–1989 University of California Systemwide Biotechnology Training Stipend

Academic Service

Federal Grant Advisory Committees

2026 Member, NIH Molecular Genetics and Genomics Study Section (ZRG1 MGG-W)
2025 Member, NIH Special Emphasis MIRA Study Section (ZRG1 MBBC - J 55)
2023 Co-Chair, NIH Molecular Genetics and Genomics Study Section (ZRG1 MGG T 02)
2021-23 Chartered Member, Co-Chair, NIH MIRA Study Section A (MRAA)
2019-21 Chartered Member, Co-Chair, NIH Molecular Genetics B (MGB) Study Section
2018 Member, NINDS Program Project (P01) Study Section (ZNS1 SRB-A)
2018 Ad Hoc, Clinical Neuroplasticity and Neurotransmitters Study Section (CNNT)
2018 Chair, NINDS Special Emphasis Panel: Clinical Neurological Disorders (BDCN)
2017 Ad Hoc, NIH Molecular Genetics B Study Section (MGB) Study Section
2016 Member, NINDS Special Emphasis Panel: Spinal Cord Injury Mechanisms (BDCN)
2016 Chair, NICHD Special Emphasis Panel: Spinal Muscular Atrophy (DRG-D)
2016 Ad Hoc, NIH Molecular Genetics B Study Section (MGB)
2015 Member, NIGMS Special Emphasis Panel: MIRA Applications (TRN-9)
2013 Member, NIH Special Emphasis Panel: Neurogenetics (ETTN-B)
2013 Ad Hoc, NIH Chronic Dysfunction and Integrative Neurodegeneration (CDIN)
2012 Ad Hoc, NIH Transformative R01 Roadmap Review (ZRG1 BCMB-A 51)
2012 Ad Hoc, Nuclear and Cytoplasmic Structure/Function and Dynamics (NCSD)
2011 Ad Hoc, NIH Chronic Dysfunction and Integrative Neurodegeneration (CDIN)

2009 Member, NINDS Special Emphasis Program Project Review Panel: ALS & SMA
2008 Ad Hoc, Nuclear Dynamics and Transport Study Section (NDT)
2007 Ad Hoc, Nuclear Dynamics and Transport Study Section (NDT)
2007 Member, NINDS Special Emphasis Panel on Muscular Dystrophy
2006 Ad Hoc, Nuclear Dynamics and Transport Study Section (NDT)
1999-2002 Ad Hoc Reviewer, NSF Molecular and Cellular Biology Program
1996, 1997 Ad Hoc Reviewer, NIH, NIEHS Molecular Cytogenetics grants

National/International

2026 Organizer, 3rd biennial meeting on "Nuclear Bodies: Hubs of Genomic Activity," Marine Biological Labs, Woods Hole, MA
2024 Organizer, FASEB 2nd biennial meeting on "Nuclear Bodies: Hubs of Genomic Activity," Niagara Falls, NY
2018 Session Chair, 59th annual Drosophila Resarch Conference, Philadelphia, PA
2013 Lead Organizer, 10th biennial Symposium on RNA Biology: "RNA Tool & Target," RNA Society of North Carolina, Chapel Hill, NC
2013 Session chair, Cold Spring Harbor Meeting on "Eukaryotic mRNA Processing." Cold Spring Harbor, NY. (August).
2011 Session chair, "Transcriptional and post-transcriptional regulation," Wenner-Gren Symposium on Nuclear actin and actin-associated proteins, Stockholm, Sweden.
2009 Minisymposium Chair, "Nuclear Structure," 49th annual American Society for Cell Biology meeting, San Diego, CA.
2006 Session chair, "Nuclear bodies," Cold Spring Harbor Meeting on Dynamic Organization of Nuclear Function. Cold Spring Harbor, NY.
2006 Session chair, "Organization of Nuclear Space", EMBO Workshop on the Functional Organization of the Nucleus, Prague, Czech Republic.
2005 Ad Hoc Reviewer, American Cancer Society, Genetic Mechanisms in Cancer
2004 Session chair, "RNA transport and localization," 9th annual meeting of the RNA Society, Madison WI.
2004 Co-Organizer, Cleveland Cell Biology Symposium '04, Cleveland OH.
2003 External Ph.D. thesis examiner, Theophany Estathioy, University of Calgary. Marvin J. Fritzler, Ph.D. advisor.
2002, 2003 Faculty advisor, student luncheon, RNA Society meeting
2001–2007 Contributing Member, Faculty of 1000 - an Internet-based literature review service, (http://www.facultyof1000.com)
2001 Instructor and Section Leader, Cold Spring Harbor Course on "Immunocytochemistry, In Situ Hybridization and Live-Cell Imaging."
2001, 2002 Ad Hoc Reviewer, Telethon, Genetic Disease Research Fund (Italy)
2000, 2001 Ad Hoc Reviewer, The Wellcome Trust (United Kingdom), Molecular and Cell Biology Panel
1999 Ad Hoc Reviewer, Medical Research Council (United Kingdom), Co-operative Group Component Grants
1999 Ad Hoc Reviewer, NWO, Research Council for Earth and Life Sciences (The Netherlands).

1997	Symposium Organizer, Microscopy and Microanalysis '97; Microscopy Society of America, Session on "Genomes, Chromosomes and Genes: Emerging Technologies."

University of North Carolina at Chapel Hill

2019	Member, Chemical Biology Faculty Search Committee iBGS/Chem/Phco
2018	Member, SOM Boost Award review committee
2018	Member, Chemical Biology Faculty Search Committee iBGS/Chem/Phco
2017	Member, Convergent Science Planning & Vision Committee, CAS
2016-	Member, Steering committee, ITCMS Training Grant, Lineberger Comprehensive Cancer Center
2016-	Biology Faculty Mentoring committee (A. Gladfelter)
2016	Member, Wilson Hall Annex Renovation Design Committee
2016	Session Chair, Triangle Fly Symposium, Chapel Hill, NC.
2015,16	Member, AP&T review committee, Dept. of Biology
2013-present	Chair, Genome Sciences Building Space Committee
2012	Member, Chemical Biology Faculty Search Committee, CCGS/Chemistry
2011-2020	Member, Steering Committee, Integrative Program for Biological and Genome Sciences (iBGS)
2011-2018	Member, BBSP Graduate School Admissions Committee
2010-2020	Lead organizer, Triangle RNA Research Group Meetings (a monthly seminar series between UNC, Duke and NC State)
2009-2014	Member, Undergraduate Studies Committee, Dept. of Biology
2009	Faculty Leadership Initiative, Leadership Development Program, School of Medicine
2009-10	Member, Written Qualifying Exam committee, Curriculum in Genetics & Molecular Biology
2009	Member, AP&T review committee, Dept. of Biology
2007-09	Chair, Faculty Oversight Committee, Animal Models Core facility

Case Western Reserve University

2004-2007	Member, Steering Committee, Cell & Molecular Biology Training Program
2004-2006	Member, Steering Committee, Postdoctoral Mentoring Program
2003-2004	Member, School of Medicine Committee on Appointments, Promotion and Tenure
1998-2000	Member, Security Committee, School of Medicine
1996-99, 02-06	Abstract Selection Committee, Biomedical Graduate Student Symposium
1994-1997	Faculty Council Representative, School of Medicine

CWRU Department of Genetics

2005-2007	Member, Steering Committee, Genetics Training Grant
2000-2002	Chair, Committee on Appointments, Promotions and Tenure
1998-1999	Member, Committee on Appointments, Promotions and Tenure
1998-2007	Chair, Steering Committee, Digital Imaging Facility
1995-1996	Member, Committee on Appointments, Promotions and Tenure
1994-2000	Organizer, Genetics Seminar Series

Editorial Boards

2025-present Board Member, *Chromosome Research*
2022-present Specialty Chief Editor, *Frontiers in RNA Research*
2018-2025 Associate Editor, *RNA Biology*
2005-2020 Associate Editor, *Molecular Biology of the Cell*
2005-2015 Board Member, *BMC: Cell Biology*
2004-2024 Associate Editor, *Chromosoma*

Invited Editorial Review

Nature
Science
Journal of Cell Biology
Nature Communications
Nature Structural and Molecular Biology
Molecular Cell
Science Advances
Molecular Biology of the Cell
Proceedings of the National Academy of Sciences
Molecular and Cellular Biology
eLife
EMBO Journal
Nature Reviews Molecular Cell Biology
Human Molecular Genetics
Journal of Biological Chemistry
PLoS ONE
G3:Genes, Genomes, Genetics
Chromosoma
Trends in Cell Biology
RNA Biology
BMC: Biology
Experimental Cell Research
Developmental Biology
Mammalian Genome
Journal of Histochemistry & Cytochemistry
Journal of Neuroscience
Journal of Rheumatology
Frontiers in Molecular Neuroscience
Cell
Genes & Development
Current Biology
Nature Cell Biology
Developmental Cell
Cell Reports
RNA
Genome Research
PLoS Biology
Journal of Cell Science
Biology Open
EMBO Reports
Development
Trends in Molecular Medicine
Nucleic Acids Research
PLoS Genetics
Genetics
Nucleus
Bioessays
Genomics
BMC: Developmental Biology
Journal of Virology
Journal of Structural Biology
American Journal of Medical Genetics
Journal of Biology
Genes to Cells
FASEB Journal
Frontiers in RNA Research

Invited Seminars and Presentations

(Presentations at meetings that do not require invitations are listed separately below)

1994

Jun - Gordon Research Conference: Molecular Cytogenetics, Plymouth, NH. Platform talk.

Aug - Oncor, Inc. Bethesda, MD. Invited seminar, "The use of oligonucleotides in fluorescence in situ hybridization"

1995

Jan - Dept. of Biochemistry, University of North Carolina, Chapel Hill, NC. Invited seminar, "Localization of small RNPs within coiled bodies and a novel perinucleolar compartment."

Aug - Microscopy and Microanalysis '95: Invited speaker. Joint meeting of MSA and HCS, Kansas City, MO.

1996

Apr - Gordon Research Conference: Molecular Cytogenetics, Barga, Italy. Platform talk.

Apr - Deutches Krebsforschungszentrum, Structural Analysis Group, Heidelberg, Germany. Invited seminar, "Subcellular organization of small RNPs."

Oct - Dept. of Biochemistry, University of Dundee, Dundee, Scotland. Invited seminar, "Coiled bodies associate with artificial arrays of U2 snRNA genes."

Oct - XXXVIII Symposium of The Society for Histochemistry: Structure-Function Relationships in the Cell Nucleus, Gargellen, Austria. Invited speaker.

Oct - E.C.Slater Institute, University of Amsterdam, Amsterdam, The Netherlands. Invited seminar, "Coiled bodies associate with artificial arrays of U2 snRNA genes."

Nov - Geron Corporation, Menlo Park, CA. Invited seminar. "Artificial snRNA genes function as coiled body organizers."

Dec - Ribozyme Pharmaceuticals, Inc., Boulder, CO. Invited seminar, "Localization of small RNPs in mammalian cells."

Dec - Dept. Molecular Cellular & Developmental Biology, University of Colorado, Boulder, CO. Invited seminar, "Artificial snRNA genes function as coiled body organizers."

1997

Aug - Microscopy and Microanalysis '97: Speaker and Session Chair "Genomes, chromosomes and genes: Emerging technologies," Joint meeting of MSA and HCS, Cleveland, OH.

1998

Jun - Gordon Research Conference: Molecular Cytogenetics, Andover, NH. Platform presentation.

Oct - Dynamic Organization of Nuclear Function, Cold Spring Harbor Laboratory. Invited speaker.

Oct - Depts. of Genetics and Cell Biology, Yale University, New Haven CT. Invited seminar, "The coiled body: A nuclear organelle involved in snRNP biogenesis."

1999

Jan - Receptor Biology & Gene Expression Laboratory, National Cancer Institute, NIH, Bethesda MD. Invited seminar, "The coiled body: A nuclear organelle involved in snRNP biogenesis."

Jan - Dept. of Embryology, Carnegie Institution of Washington, Baltimore MD. Invited seminar, "The coiled body: A nuclear organelle involved in snRNP biogenesis."

Jun - 3rd International SMA Research Group Meeting, Milwaukee, WI. Invited speaker and roundtable discussion panelist.

Jun - MRC Human Genetics Unit, Western General Hospital, Edinburgh, Scotland. Invited seminar. "Molecular genetic analyses of the coiled body."

Jun - Sir William Dunn School of Pathology, University of Oxford, England, UK. Invited seminar. "The coiled body: A nuclear organelle involved in snRNP biogenesis."

Aug - EMBO workshop, "Functional Organization of the Cell Nucleus," Prague, Czech Republic. Invited participant.

Oct - Cold Spring Harbor Laboratory Course on Advanced in Situ Hybridization and Immunocytochemistry. Invited course lecturer.

2000

Feb - UC Davis Cancer Center, Sacramento, CA. Invited seminar, "The Cajal (coiled) body: A nuclear organelle involved in snRNP biogenesis and trafficking."

Jun - 4th International SMA Research Group Meeting, St. Louis, MO. Invited speaker and roundtable discussion panelist.

2001

Jan - Northwestern University School of Medicine, Chicago, IL. Invited seminar, "Coilin, Cajal bodies and Spinal Muscular Atrophy."

Jun - 5th International SMA Research Group Meeting, Chicago, IL. Invited speaker and discussion panelist.

Oct - Scripps Research Institute, La Jolla, CA. Invited seminar, "Coilin forms the bridge between Cajal bodies and SMN, the Spinal Muscular Atrophy protein."

Oct - Cold Spring Harbor Laboratory, Cold Spring Harbor, NY. Course seminar "RNA FISH."

Nov - First Joint French-German Congress on Cell Biology, Strasbourg, France. *Journal of Cell Biology* Lecture, Plenary Speaker. "Nuclear Bodies and Spinal Muscular Atrophy."

2002

Feb - University of Georgia, Athens, GA. Invited seminar, "Genetic Analysis of Cajal Bodies: A Tale of Mice and MEFs."

Mar - Carnegie Mellon University, Pittsburgh, PA. Invited seminar, "Nuclear Bodies and Spinal Muscular Atrophy."

Mar - University of Dundee, Scotland. Invited seminar, "Arginine Methylation and Control of Nuclear Body Formation."

Mar - Joint Meeting of British Societies for Cell and Developmental Biology, University of York, England, UK. Invited Speaker, "Genetic Analysis of Cajal Bodies: A Tale of Mice and MEFs."

Apr - EMBO Workshop on Functional Organization of the Cell Nucleus, Prague, Czech Republic. Invited Speaker, "Coilin methylation regulates SMN binding and nuclear body formation".

Jun - 6th International SMA Research Group Meeting, Schaumburg IL, Karen Tucker, presenter: "Coilin methylation regulates SMN binding and nuclear body formation."

Sept - Brown University, Providence, RI. Invited seminar, “Coilin, arginine methylation and nuclear body formation.”

Nov - Michigan State University, East Lansing, MI. Invited seminar, "Post-translational modifications regulate nuclear body composition and formation."

2003

Feb - University of Dundee, Scotland, UK. Invited seminar, “Molecular determinants of SMN nuclear import.”

Mar - University of Bern, Switzerland. Invited seminar. “Protein arginine methylation regulates nuclear body formation and composition.”

Apr - University of Cantabria, Santander, Spain. Invited seminar. “Post-translational modifications regulate Cajal body formation and composition.”

Apr - Centro de Investigaciones Biologicas, Madrid, Spain. "Post-translational modifications regulate Cajal body formation and composition."

Apr - CNRS, Montpellier, France. Invited seminar. “Coilin, snRNP biogenesis and spinal muscular atrophy.”

Apr - University of Aberdeen, Scotland. Dept. of Molecular and Cell Biology. Invited seminar. “Post-translational modifications regulate formation and composition of subnuclear bodies.”

May - Albert Einstein College of Medicine, Bronx, NY. Dept. of Cell Biology. Invited seminar, “Coilin, snRNP biogenesis and spinal muscular atrophy.”

May - University of Edinburgh, Scotland. Wellcome Centre for Cell Biology. Invited seminar, “Nuclear bodies, snRNP biogenesis and spinal muscular atrophy.”

Jun - Centre de Regulació Genòmica, Barcelona, Spain. Invited seminar. “Coilin, snRNP biogenesis and spinal muscular atrophy.”

Jun - University of Oxford, Developmental Biology Seminar series, Oxford, England, U.K. Invited seminar, “Cajal bodies, snRNP biogenesis and Spinal Muscular Atrophy.”

Jul - Charles University, Prague, Czech Republic. Dept. of Cell Biology. Invited seminar, “Cajal bodies, snRNP biogenesis and Spinal Muscular Atrophy.”

Sep - University of Michigan, Ann Arbor MI. Dept. of Biological Chemistry. Invited seminar, “Protein arginine methylation, snRNP biogenesis and control of nuclear body formation.”

Oct - Medical College of Wisconsin, Milwaukee, WI. Dept. of Microbiology and Molecular Genetics. Invited seminar, “Cajal bodies, snRNP biogenesis and Spinal Muscular Atrophy.”

Oct - Cleveland State University, Cleveland OH. Biological Sciences Program, Invited seminar, “Cajal bodies, snRNP biogenesis and Spinal Muscular Atrophy.”

Dec - University of Calgary, AB, Canada. Faculty of Medicine, Dept. of Biochemistry & Molecular Genetics. Invited seminar, “Protein arginine methylation, snRNP biogenesis and control of nuclear body formation.”

2004

Feb - University of Mississippi Medical Center, Jackson, MS. Dept. of Biochemistry. Invited seminar, “Nuclear bodies, small RNA biogenesis and Spinal Muscular Atrophy.”

Mar - Metro Health Center, Cleveland, OH, Rammelkamp seminar series. Invited seminar "Nuclear bodies, small RNA biogenesis and Spinal Muscular Atrophy."

Apr - Ohio State University, Columbus, OH, Dept. of Biology, Invited seminar, "Nuclear bodies, small RNA biogenesis and Spinal Muscular Atrophy."

Apr - International Symposium on Functional Organization of the Nucleus, Deutsche Forschungsgemeinschaft (German Research Society), Heidelberg, Germany. Invited plenary speaker, "Biogenesis of small nuclear RNAs: The Spinal Muscular Atrophy Connection."

Jun - 9th Annual RNA Society Meeting, Madison, WI. Session Chair: "RNA Localization and Transport."

Jun - 8th International SMA Research Group Meeting, Schaumberg, IL. Invited speaker and discussion panelist, "Coupled import of U snRNPs and SMN."

Ju1 - Wenner-Gren Foundation and Royal Swedish Academy of Sciences, Kristineberg Symposium on The Cell Nucleus, Kristineberg, Sweden. Invited speaker, "The Ins and Outs of small nuclear RNPs."

Nov - University of Illinois at Urbana-Champaign. Dept. of Cell and Structural Biology. Invited speaker, "Trafficking of small nuclear RNAs: The Spinal Muscular Atrophy connection."

2005

Jun - 9th International SMA Research Group Meeting, Philadelphia, PA. Invited speaker, (T.K. Rajendra, presenter): "Neuromuscular development and snRNPs: A fly model for Spinal Muscular Atrophy."

Sept - INSERM, Institut Albert Bonniot, Grenoble, France. Invited speaker, "Biogenesis of small nuclear RNAs: The Spinal Muscular Atrophy Connection."

Sept - EMBO/FEBS Conference on Nuclear Structure and Dynamics, Montpellier, France. Invited speaker, "Trafficking of small nuclear RNPs: The Spinal Muscular Atrophy connection"

Nov - Duke University, Dept. of Molecular Genetics and Microbiology, Durham, NC., Invited speaker, "Biogenesis of small nuclear RNPs: The Spinal Muscular Atrophy connection."

Nov - University of North Carolina at Chapel Hill, Dept. of Genetics, Chapel Hill, NC. Invited speaker, "Biogenesis of small nuclear RNPs: The Spinal Muscular Atrophy connection."

Nov - Yale University, Dept. of Cell Biology, New Haven, CT. Invited speaker, "Trafficking of small nuclear RNPs: The Spinal Muscular Atrophy connection."

2006

Jan - Cleveland Clinic Foundation, Dept. of Cell Biology, Cleveland, OH. Invited speaker, "Trafficking of small nuclear RNPs: The Spinal Muscular Atrophy connection."

Mar - University of North Carolina at Chapel Hill, Dept. of Biology, Chapel Hill, NC. Invited speaker, "Biogenesis of small RNPs: Spinal Muscular Atrophy & Germ Cell Development."

April - Emory University, Dept. of Cell Biology, Atlanta, GA. Invited speaker, "Small Ribonucleoproteins in Spinal Muscular Atrophy & Germ Cell Development"

May - Charles University, Prague, Czech Republic. Public tutorial lecture, "Understanding spinal muscular atrophy: How small RNAs can cause big problems"

May - 3rd EMBO Workshop on Functional Organization of the Nucleus, Prague, Czech Republic. "Small RNP trafficking in health and disease."

May - Center for Brain Research, Medical University of Vienna, Vienna, Austria. Invited speaker, "Biogenesis of Small RNPs: Spinal Muscular Atrophy and Germ Cell Development."

Jun - 10th International SMA Research Group Meeting, Philadelphia, PA. Invited speaker, "Hypomorphic mutations in *Drosophila Smn*: A fly model for Spinal Muscular Atrophy."

Jun - University of Connecticut Health Center, Dept. of Genetics and Developmental Biology, "Biogenesis of Small RNPs: Spinal Muscular Atrophy and Germ Cell Development."

Sept - 4th Cold Spring Harbor Laboratory meeting on Dynamic Organization of Nuclear Function, Session Chair: "Nuclear Bodies."

Nov - University of Florida, College of Medicine, Dept. of Molecular Genetics & Microbiology, Gainesville, FL. Invited speaker, "Small RNPs in Spinal Muscular Atrophy & Germ Cell Development."

2007

Feb - University of North Carolina at Chapel Hill, Dept. of Biology, Chapel Hill, NC. Invited speaker, "Drosophila models of Spinal Muscular Atrophy and RNP biogenesis."

Mar - Rosalind Franklin University, Dept. of Cell Biology & Anatomy, Chicago, IL. Invited speaker, "Drosophila models of Spinal Muscular Atrophy and RNP biogenesis."

Apr - Harvard University, Dept. of Genetics, Cambridge MA. Invited speaker, "A Drosophila model of Spinal Muscular Atrophy"

Apr - Northwestern University, School of Medicine, Dept. of Cell and Molecular Biology, Chicago IL. Invited speaker, "Drosophila models of Spinal Muscular Atrophy and RNP biogenesis."

Jun - 11th International SMA Research Group Meeting, Schaumberg, IL. Invited speaker (Michael Walker, presenter), "The SMN complex and striated muscle."

Sept - EMBO Conference on Nuclear Structure and Dynamics, Montpellier France. Invited speaker: "Two distinct arginine methyltransferases are required for biogenesis of Sm-class RNPs."

2008

Apr - University of Ottawa and Ottawa Health Research Institute, Ottawa, ON. Invited speaker: "Animal models of spinal muscular atrophy."

Jun - 12th International SMA Research Group Meeting, Schaumberg, IL. Invited speaker, "SMN is a proteolytic target of calpain."

Jul - University of Würzburg, Dept. of Biochemistry, Würzburg, Germany. Invited speaker: "Animal models of Spinal Muscular Atrophy."

Sept - Duke University, RNA Center, Durham, NC. Invited speaker: "Biogenesis of small ribonucleoproteins in health and disease."

Sept - Carnegie Institution of Washington, Dept. of Embryology, Baltimore MD. Invited speaker: "Post-translational modification of spliceosomal Sm proteins in snRNP biogenesis and germ cell development."

Oct - University of Alberta, Dept. of Experimental Oncology, Edmonton, AB. Invited speaker: "Diverse roles for Sm proteins in snRNP biogenesis and germ cell development."

Nov - University of Pennsylvania, Dept. of Biochemistry & Biophysics, Philadelphia PA. Invited speaker: "Biogenesis of small ribonucleoproteins in health and disease."

Dec - Columbia University, Motor Neuron Center, New York, NY. Invited speaker: "Animal models of spinal muscular atrophy."

2009

Jun - 13th International SMA Research Group Meeting, Schaumberg, IL. Invited speaker (Jennifer Fuentes, presenter), "Determinants of SMN cleavage by calpain and regulation of SMN function."

Sept - EMBO Conference on Nuclear Structure and Dynamics, L'Isle sur la Sorgue, France. Invited speaker: "Cajal and Histone Locus Bodies: Exploring new connections."

Nov - Alfred I. duPont Hospital for Children, Translational Science Research Seminar Series, Wilmington, DE. Invited speaker: "Animal models of spinal muscular atrophy."

2010

May - ESF-EMBO Conference on RNA Quality Control, Vienna, Austria. Invited speaker: "Sm proteins specify germ cell fate by facilitating *oskar* mRNA localization."

Jun - 75th Symposium on Quantitative Biology: Nuclear Organization and Function, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY. Invited speaker: "Genetic analysis of nuclear body function."

Dec - McGill University, Dept. of Biochemistry, Montreal, QB, Canada. Invited speaker: "Diverse roles for Sm proteins in pre-mRNA splicing and germ cell development."

2011

Sept - Wenner-Gren Foundation Symposium: Actin and actin-associated proteins from gene to polysomes, Stockholm, Sweden. Session Chair and Invited Speaker, "Nuclear proteins with cytoplasmic jobs: An actin-Sm protein connection?"

2012

Jun - 16th International SMA Research Group Meeting, Minneapolis, MN. Invited speaker (Kavita Praveen, presenter), "A *Drosophila* model of SMA uncouples the snRNP biogenesis functions of SMN from locomotion and viability defects."

Jun - Wellcome Trust Workshop on Subnuclear structures and disease, Cambridge, UK. Invited speaker: "Genetic Analysis of Nuclear Body Formation and Function."

2013

Jun - 17th International SMA Research Group Meeting, Anaheim, CA. Invited speaker (Eric Garcia, presenter), "Developmental arrest of *Drosophila* Survival Motor Neuron (Smn) mutants accounts for differences in expression of minor intron-containing genes."

Nov - Georgia Regents University, Dept. of Cell Biology and Anatomy, Augusta, GA. Invited speaker: "Engineering histone genes to interrogate the epigenetic code."

2014

Jun - 18th International SMA Research Group Meeting, National Harbor, MD. Invited speaker (K. Gray presenter), "Modeling SMA-causing point mutations in the fruitfly."

2016

Mar - Department of Biochemistry, North Carolina State University, Raleigh, NC, Invited speaker: "Engineering histone genes to interrogate the epigenetic code"

May - Department of Molecular Biophysics and Biochemistry, Yale University School of Medicine, New Haven, CT. Invited speaker: "Genetic and epigenetic regulation of transcription and RNA processing in animal cells."

Jun - Department of Biochemistry, University of California, Los Angeles, CA. Invited speaker: "Genetic and epigenetic regulation of transcription and RNA processing in animal cells."

Jun - 20th International CureSMA Research Meeting, Anaheim, CA. Invited speaker, "Genetic and genomic approaches to understanding SMN function using Drosophila models of Spinal Muscular Atrophy."

Sept - EMBL meeting on Proteomics in Cell Biology and Disease Mechanisms, Heidelberg, Germany. Invited speaker. "Genetic and proteomic approaches to understanding SMN function using Drosophila models of Spinal Muscular Atrophy."

Sept - Centre for Gene Regulation and Expression, School of Life Sciences, University of Dundee, United Kingdom. Invited Speaker, "Engineering histone genes to interrogate the epigenetic code."

Oct - Department of Biomedical Sciences, Paul L. Foster School of Medicine, Texas Tech University Health Sciences Center, El Paso, TX. Invited speaker, "Genetic and genomic approaches to understanding SMN function using Drosophila models of Spinal Muscular Atrophy."

2017

Jun - Institute for Advanced Biosciences (IAB), Centre de Recherch, Université Grenoble Alpes, Grenoble, France. Invited speaker, "Interrogating the epigenetic code in animal cells using genetically engineered histone gene clusters."

2018

Apr - University of Pennsylvania, Dept. of Biochemistry & Biophysics, Philadelphia PA. Invited speaker: "Engineering metazoan histone genes to interrogate the epigenetic code."

Dec - Rutgers New Jersey Medical School, Dept. of Biochemistry and Molecular Biology, Newark, NJ. Invited speaker: "Engineering metazoan histone genes to interrogate the epigenetic code."

2019

May - Umeå Universitet, Dept. of Molecular Biology, Umeå, Sweden. Invited speaker: "Engineering metazoan histone genes to interrogate the epigenetic code."

2023

Feb - University of Alabama at Birmingham, Dept. of Biochemistry, Birmingham, AL. "Engineering histone genes to understand functions of histone PTMs on pre-mRNA processing and cellular memory."

Apr - University of Minnesota, Dept. of Biochemistry and Molecular Genetics, Minneapolis, MN. Invited speaker: "Designing histone genes to interrogate effects of histone PTMs on RNA processing and cellular memory."

Apr - University of Wisconsin, Dept. of Biomolecular Chemistry, RNA MaxiGroup, Madison, WI. Invited speaker: "Designing histone genes to interrogate effects of histone PTMs on RNA processing and cellular memory."

2024

Nov – University of Colorado Anschutz Medical Campus, Dept of Biochemistry and Molecular Genetics. Denver, CO. Invited speaker: "Designing histone genes to interrogate effects of PTMs on transcription and pre-mRNA processing."

2025

Mar – University of Colorado, Dept of Molecular, Cellular and Developmental Biology. Boulder, CO. Invited speaker: "Designing histone genes to interrogate effects of PTMs on transcription and pre-mRNA processing."

2026

Sep – Albert Einstein College of Medicine, Dept of Biochemistry. Bronx, NY. Invited speaker: "Engineering histone genes to decipher epigenetic regulatory information."

Oral Platform Presentations

(Solicited National/International meetings only, poster abstracts not listed)

1993 RNA Processing meeting, Cold Spring Harbor NY: "Organization of small nucleolar ribonucleoproteins."

1995 RNA Processing meeting, Cold Spring Harbor NY; S.L. Wolin, presenter: "A perinucleolar compartment contains several RNA polymerase III transcripts as well as the polypyrimidine tract-binding protein."

1996 46th American Society of Human Genetics, San Francisco CA; C.L. O'Keefe, presenter: "Haplotype-specific oligoprobes can distinguish homologous chromosomes by FISH."

1997 47th American Society of Human Genetics meeting, Baltimore MD; C.L. O'Keefe, presenter: "Distinguishing homologous chromosomes by FISH: Nondisjunction of chromosome 17 during male meiosis."

1998 3rd RNA Society meeting, Madison WI; M.R. Frey, presenter: "The 'Salmon Theory' of snRNP biogenesis: Do coiled bodies regulate U snRNA transcription?"

1998 48th American Society of Human Genetics meeting, Denver CO; C.L. O'Keefe, presenter: "Haplotype-specific oligoprobes for chromosomes 15 and 16 can distinguish homologous centromeres by FISH."

1998 48th American Society of Human Genetics meeting, Denver CO: "Coiled body associated loci: Isolation, mapping and functional characterization of dispersed, single-copy snRNA genes."

2000 5th RNA Society meeting, Madison, WI: "Self-association of p80 coilin and cell-cycle dependent accumulation of CDK2-cyclin E in Cajal bodies."

2001 6th RNA Society meeting, Banff, Alberta; M.D. Hebert, presenter: "Coilin recruits SMN, the Spinal Muscular Atrophy protein to Cajal bodies."

2001 51st American Society of Human Genetics meeting, San Diego, CA: "Coilin forms the bridge between Cajal bodies and SMN, the SMA protein."

2002 7th RNA Society meeting, Madison WI; Usha Narayanan, presenter: "Nuclear import of Sm snRNPs without snurportin?"

2002 7th RNA Society meeting, Madison WI: "Coilin methylation regulates SMN binding and nuclear body formation."

2002 42nd American Society for Cell Biology meeting, San Francisco CA; Nuclear structure and function minisymposium; K.B. Shpargel, presenter: "Post-translational modifications of coilin control Cajal body number and composition."

2003 8th RNA Society meeting, Vienna, Austria: "Molecular determinants of SMN nuclear import."

2004 45th Annual Drosophila Research Conference, Washington D.C., RNA Biology Workshop: "PHAX, a *Drosophila* snRNA export factor required for neuromuscular development and fertility."

2004 Dynamic Organization of Nuclear Function, Cold Spring Harbor Laboratory, Cold Spring Harbor NY: "Interaction of Cajal bodies with small nuclear RNA genes."

2005 10th RNA Society meeting, Banff, AB: "*PHAX*, the small nuclear RNA export factor is required for proper neuromuscular development in *Drosophila*"

2005 FASEB Summer Research Meeting on RNA Sorting, Transport and Localization, Tucscon, AZ: "Mutations in Drosophila *PHAX* cause inefficient snRNA export and neuromuscular defects."

2005 45th American Society for Cell Biology meeting, San Francisco CA; Nuclear subdomains minisymposium; T.K. Rajendra, presenter: "Neuromuscular development and snRNPs: A fly model for Spinal Muscular Atrophy."

2006 11th RNA Society meeting, Seattle WA; G.B. Gonsalvez, presenter: "Symmetric arginine dimethylation of Sm proteins is dispensable for UsnRNP biogenesis, but is required for germ cell specification and maintenance."

2007 12th RNA Society meeting, Madison WI; G.B. Gonsalvez, presenter: "Two distinct arginine methyltransferases are required for biogenesis of Sm-class ribonucleoproteins."

2008 13th RNA Society meeting, Berlin, Germany: "Diverse roles of metazoan Sm proteins in snRNP biogenesis and germ cell development."

2009 50th Annual Drosophila Research Conference, Chicago, IL, G.B. Gonsalvez, presenter: "Sm proteins specify germ cell fate."

2009 49th American Society for Cell Biology meeting, San Diego CA; Nuclear structure and function minisymposium; K. Praveen, presenter: "Nuclear body crosstalk."

2010 50th American Society for Cell Biology meeting, Philadelphia, PA; Special Interest Subgroup on the Cell biology of metabolic pathways: "Localization and transport of small RNPs in *Drosophila* oogenesis."

2013 54th Annual Drosophila Research Conference, Washington, DC; RNA Biology session: "Modeling spinal muscular atrophy point mutations in *Drosophila* melanogaster."

2013 CSHL Meeting on Eukaryotic mRNA Processing; Cold Spring Harbor, NY. E. Garcia, presenter; "Developmental arrest of *Drosophila survival motor neuron* (*Smn*) null mutants."

2014 19th RNA Society meeting, Quebec City, Canada. Z. Lu, presenter; "tRNA intronic circular (tric)RNAs: biogenesis, biology and biotechnology."

2014 CSHL Meeting on Nuclear Organization and Function; Cold Spring Harbor, NY; "Engineering histone genes to interrogate the epigenetic code"

2015 20th RNA Society meeting, Madison, WI. M. Meers, presenter; "Pervasive, novel ncRNA transcription in histone H3 lysine 36 mutants links chromatin-mediated RNA processing with organismal viability and development."

2016 CSHL Meeting on Nuclear Organization and Function; Cold Spring Harbor, NY; "H3K36 mutation causes a global redistribution of transcription and RNA processing"

2017-2020 [did not keep track]

2021 Cold Spring Harbor Laboratory, Meeting on Nuclear Organization and Function

2022 63rd Annual Drosophila Research Conference, San Diego, CA

2022 1st FASEB Research Conference on Nuclear Bodies: Hubs of genome activity, Oak Island, Nova Scotia, Canada

2026 Cold Spring Harbor Laboratory, Meeting on Epigenetics and Chromatin

Teaching Experience

University of North Carolina (2007– present):

Contact hrs/yr: 55 Instructor, BIOL 434, Advanced Molecular Biology: Gene Expression Control Systems. A literature-based, upper-division undergraduate course with an emphasis on molecular mechanisms used in higher eukaryotic systems, as revealed through experimental analysis. Fall semesters, 2019 - 2024. 25-30 students.

Contact hrs/yr: 22 Instructor, BIOL 680, Recent Biological Research and Methods. An advanced seminar based course focusing on modern molecular biology research methodology. 2015 to 2018, Spring semesters. 5-10 students.

Contact hrs/yr: 25 Organizer and Instructor, BIOL 202, Molecular Biology & Genetics (core undergraduate course for Biology majors), Covers basic topics from Mendelian genetics to Central Dogma. 2008 thru 2014, Spring semesters. 250 students.

Contact hrs/yr: 30 Instructor, BBSP 902, First Year Group. A seminar based course focusing on development of critical thinking and other professional skills relating to scientific communication (*e.g.* writing and speaking). 2008 thru 2013, Fall and Spring semesters. 16 students.

Contact hrs/yr: 45 Instructor, BIOL 890, Nuclear Structure & Dynamics (upper level literature course for graduate students), Topics: Functional organization of replication, transcription and RNA processing, machineries in eukaryotic nuclei. Chromatin dynamics; Nucleoli; Nuclear bodies. (2008 only). 7 students.

Contact hrs/yr: 45 Instructor, BIOL 434, Advanced Molecular Biology (undergraduate course targeting upper level Biology majors), Topics: Regulation of Gene Expression (Fall 2019, 2020, 2021…). 25 students.

Case Western Reserve University (1994 – 2007):

Contact hrs/yr: 14 Genetics Section Coordinator and Lecturer, CBIO 453, Correlated Curriculum in Cell and Molecular Biology (C3MB). Cell Biology I (introductory course for all incoming graduate students in Biomedical Sciences Training Program). Developed course module (5 lecture periods plus exam) on "Cell Biology of the Nucleus." Topics: Organization of eukaryotic genomes, Centromeres and Telomeres, Position effects on gene regulation, Cell Biology of RNA processing.

Contact hrs/yr: 45 Course organizer, GENE 515, Nuclear Structure and Function: Cell Biology of the Nucleus (upper level literature course for Genetics graduate students), Topics: Chromosome Territories & Dynamics, Replication, Nucleolar functions, Heterochromatin, Polycomb domains, Functional organization of transcription and RNA processing, Nuclear bodies. (even numbered years only).

Contact hrs: 3 Lecturer, CBIO 455, Correlated Curriculum in Cell and Molecular Biology (C3MB). Molecular Biology I (introductory course for all incoming graduate students in Biomedical Sciences Training Program plus students in the Physiology & Biophysics program). Topics: Thermodynamics of Macromolecules and Kinetics of Bimolecular Reactions. (1996 only, filled in for departed faculty member).

Contact hrs/yr: 6 Discussion leader, MED School Core Academic Program, Genetics core small group sessions. Topics: Mendelian inheritance, Linkage, Cytogenetics, Triplet repeat diseases, Cancer genetics."

Contact hrs/yr: 2 Lecturer, GENE 500, Advanced Eukaryotic Genetics (introductory course for all second-year Genetics graduate students and first year clinical fellows). Topics: Molecular definition of a gene; Genome organization, Retrotransposition and In Situ Hybridization. (1994-2000)

Contact hrs: 12 Lecturer, GENE 514, Mammalian Cytogenetics (upper level course for Genetics graduate students), Developed course module, 8 lecture periods, on "Advanced Topics in FISH and Digital Imaging Microscopy." (1995 & 1997 only).

University of California at Davis (1984 – 1987):

Associate-in-Residence, CHEM 107/108, Physical Chemistry for the Life Sciences and Physical Chemistry of Macromolecules.

Teaching Assistant, CHEM 001, Introductory Chemistry.

Research Training

Doctoral Students:

Christine L. O'Keefe, Ph.D. (Mar 1994 – Sept 1999); Program in Genetics. Dissertation title: "Development and application of oligoprobes capable of distinguishing homologous chromosomes." Subsequently a Postdoctoral Research Associate with Dr. Jaroslaw Maciejewski, Taussig Cancer Center, Cleveland Clinic Foundation.

Mark R. Frey (Jan 1997 – Apr 2001); Program in Cell Biology. Dissertation title: "Interaction of snRNA genes with Cajal Bodies" Presently, Group Leader of Regulatory Biology at Athersys, Inc., Cleveland, OH.

Karen E. Tucker (Jun 1998 – Aug 2001); Program in Genetics, matriculated in 1995; transferred from lab of Dr. Urs Rutishauser when he left Case in 1998. Dissertation title: "Genetic Analysis of Cajal Bodies in Mouse Cells." Subsequently became a full-time parent.

Jason K. Ospina (Mar 2000 – Aug 2005); Program in Genetics, Dissertation title: "A functional analysis of the small nuclear RNP import adaptor, Snurportin1." Subsequently a postdoctoral fellow in the laboratory of Alan Zhu, Cleveland Clinic Foundation.

Usha Narayanan (Mar 2001 – Oct 2004); Program in Genetics, Dissertation title: "Dissecting the nuclear import of snRNPs via the Sm-core pathway." FRAXA Society postdoctoral fellow with Steve Warren, Emory University.

Karl B. Shpargel (Mar 2001 – Aug 2006); Program in Genetics, Dissertation title: "Gemin function in snRNP biogenesis and Spinal

Muscular Atrophy." Currently a Research Assistant Professor, Dept. of Genetics, UNC Chapel Hill.

Michael P. Walker (Jan 2003 – Sept 2008); Program in Genetics, Dissertation title: "Novel functions of SMN complex members and their implications in Spinal Muscular Atrophy." Postdoctoral at S. Illinois Medical Ctr.

Kavita Praveen (Jan 2006 – Aug 2012); Curriculum in Genetics & Molecular Biology. Dissertation title: "Modeling human Spinal Muscular Atrophy mutations in *Drosophila melanogaster*." Postdoc at Duke University, now Manager at Regeneron Genetics Center, Tarrytown, NY.

Amanda J. Hicks Natalizio (Jan 2007 – Aug 2013); Curriculum in Genetics. Dissertation title: "Identification and characterization of *Drosophila* Snurportin reveals a role for the import receptor Moleskin/Importin-7 in snRNP biogenesis." Postdoc at Duke University, then Genetic Variant analyst at LabCorp, Burlington NC.

Zhipeng Lu (Jul 2008 – July 2014); Program in MCD Biology. Dissertation title: "Comprehensive analysis of eukaryotic Sm-associated ribonucleoprotein complexes." Postdoc with Howard Chang at Stanford University, now Assistant Professor at Univ. of Southern California, Los Angeles, CA.

Michael P. Meers (Jul 2010 – May 2017); Curriculum in Genetics, NIH F31 fellowship awardee. Thesis research on epigenetic control of mRNA transcription and processing in *Drosophila*. Postdoc with Steve Henikoff at FHCRC, Seattle, WA. Currently Assistant Professor at Washington University, St. Louis, MO.

John J. Noto (Jul 2012 – Dec 2017); Curriculum in Genetics, Dissertation title: "Endogenous and engineered expression of tRNA-intronic circular RNAs.", Postdoc at University of Tennessee, Knoxville TN.

Kelsey Gray (Jul 2012 – Jan 2018); Curriculum in Genetics, NSF GFRP Awardee. Dissertation title: "Survival Motor Neuron interaction partners in Drosophila melanogaster." Postdoc and Fulbright Scholar at Emory University, Atlanta GA. Subsequently Assistant Professor at Chapman University, Los Angeles CA.

Casey A. Schmidt (Jul 2012 – Jun 2019); Curriculum in Genetics, NSF GFRP Awardee. Dissertation title: "In vivo analysis of metazoan tRNA intron splicing." Postdoc and FIRST program scholar at Emory University, Atlanta GA. NIH F31 Awardee. Currently Assistant Professor at Lafayette College, Easton, PA.

Amanda C. Raimer (Jul 2013 – May 2020); Curriculum in Genetics. Dissertation title: "Effects of SMN mutations on protein stability and SMA-like phenotypes in Drosophila." Postdoctoral Teaching Scholar, HHMI REALISE Program, Radford Univ., Radford VA.

Masters Students:

Lisa K. Massello, (July 1995 – June 1997); conducted research on coilin function in the mouse.

Emily B. Harkins (Apr 2000 – Dec 2003); program in Genetics; conducted research on mammalian Cajal body proteins.

Yushen Chang (Apr 2002 – May 2004); program in Genetics, conducted research on *Drosophila* models of RNP biogenesis.

Yu Chen (Jan 2005 – Sept 2007); program in Genetics, conducted research on the mechanism of snRNP import in vivo.

Kristin M. Morrison (Jan 2007 – July 2008); program in Genetics, performed genetic and cellular models of snRNP biogenesis.

Katie S. Bolling (co-mentored with Brian Strahl, Jul 2014 – Dec 2016); Curriculum in Genetics. Regulation of H2B monoubiquitylation.

Benjamin D. McMichael (Jul 2022 – May 2024); Quantitative Biology Program, Dept. of Biology, Effects of histone PTMs on gene expression and RNA processing.

Postdoctoral Fellows and Associates:

Wei Wu, Ph.D. (May 1996 – June 1997); subsequently a posdoctoral fellow at Michigan State Univ.

Michael D. Hebert, Ph.D. (Aug 1998 – Jul 2002); received a postdoctoral Career Development Award from Muscular Dystrophy Association; currently full Professor of Biochemistry, University of Mississippi Medical Center, Jackson, MS.

Piotr W. Szymczyk, Ph.D. (Jan 2000 – Sept 2001); currently Head of Department of Pharmaceutical Biotechnology, Medical University of Łódź, Poland.

T.K. Rajendra, Ph.D. (Oct 2001 – May 2011); post-doctoral research on snRNP biogenesis and neuromuscular development in *Drosophila*; currently Professor of Molecular Genetics at D.Y. Patil Biotechnology & Bioinformatics Institute, Pune, India.

Graydon B. Gonsalvez, Ph.D. (Jul 2004 – Jun 2009); conducted post-doctoral research on mechanisms of protein arginine methylation and small RNP biogenesis in *Drosophila* and human. Awarded a Ruth L. Kirschstein NRSA fellowship, F32-HD055711 (2007-2009); currently full Professor of Anatomy and Cellular Biology, Georgia Health Sciences University, Augusta, GA.

Jason K. Ospina (Nov 2006 – Apr 2007); returned to the lab as a postdoc after a brief stint at a biotechnology company; currently Product Development Manager, Therapeutics & Diagnostics at Cleveland Clinic Innovations, Cleveland, OH.

Jennifer L. Fuentes, Ph.D. (Apr 2007 – Nov 2010); conducted post-doctoral research on Spinal Muscular Atrophy in human and mouse cells. Currently a research scientist at Cell Signaling Technology, Inc., Danvers, MA.

Mario Izaguirre-Sierra, Ph.D. (May 2008 – Apr 2010); subsequently a postdoctoral fellow at Carnegie Institution of Washington, Baltimore, MD. Currently Assistant Professor of Biology, Northern New Mexico College.

Ingo Meier, Ph.D. (Aug 2008 – Dec 2010); conducted post-doctoral research on mouse models of Cajal bodies and Spinal Muscular Atrophy. Currently works for ThermoFischer in Cologne, Germany.

Eric L. Garcia, Ph.D. (Jan 2011 – Sept 2015); appointed as a Lineberger Fellow, post-doctoral research on *Drosophila* models of pre-mRNA processing and snRNP biogenesis. Subsequently Assistant Professor of Microbiology, Immunology & Molecular Genetics at University of Kentucky, Lexington KY.

Stephen L. Klusza, Ph.D. (Jan 2012 – Jul 2016, co-mentored with Bob Duronio); appointed as a Lineberger Fellow, post-doctoral research using *Drosophila* to study epigenetics and development. Currently Associate Professor of Biology at Clayton State University, Atlanta GA.

Ashlyn M. Spring, Ph.D. (Sept 2016 – Sept 2019); appointed as UNC SPIRE fellow, conducted post-doctoral research on *Drosophila* models of Spinal Muscular Atrophy. Subsequently, Assistant Professor of Biology, University of Wisconsin at River Falls.

Harmony R. Salzler, Ph.D. (Nov 2018 – present); Staff scientist.

Swetha D. Velivela, Ph.D. (Feb 2019 – Dec 2020); subsequently a scientist at BioSkryb, Durham NC; currently at AskBio, RTP.

Rebecca E. Steiner, Ph.D. (Aug 2019 – Jul 2021); currently Assistant Professor of Biochemistry and Genetics, Lake Erie College of Osteopathic Medicine, Bradenton FL.

Rohit Kunar, Ph.D (May 2023 – Dec 2024); Postdoctoral fellow; currently Assistant Professor of Biological Science at Adamas University, West Bengal, India.

Hina Sultana, Ph.D. (Jun 2023 – present); Staff scientist.

Undergraduates:

Tabitha Barber, CWRU Biology Dept., (May 1997 – Sept 1999) independent study student, awarded an ACS Joseph S. Silber summer fellowship; conducted research on structure and function of mouse *coilin* gene; graduated from Rush Medical College, Chicago IL.

John Murphy, CWRU Biology Dept., independent study (Jan–Aug 1999); conducted research on genomic organization of human snRNA genes.

Eric Kennedy, Cuyahoga Community College, Biology Dept., "Bridges to Success in the Sciences Program" (Nov, 2000 – Aug, 2001); transferred to Case in 2002, was awarded a Howard Hughes Summer Program for Undergraduate Research stipend (SPUR, 2003).

Thomas Lumsden, Cuyahoga Community College, Biology Dept. (Jun 2006 – Aug 2006); summer independent study student.

Tripurari Mishra, CWRU Biology Dept. (Apr 2007 – Dec 2007); independent study student.

Suzanne Creekmore, UNC Biology Dept. (Jan 2008 - May 2008); independent study student.

Suzanne Ploeger, UNC Biology Dept. (Sept 2008 - May 2009); independent study student.

Molly Strayer, Elon University (Jun 2009 - Aug 2009); summer internship.

Katherine Reichelt, UNC Biology Dept. (Aug 2009 - June 2010); independent study student.

Michael Murphy, UNC Biology Dept. (Sept 2009 - May 2010); independent study student.

Caitlin Williams, UNC Biology Dept. (Sept 2009 - May 2010); independent study student

Michael Boyle, UNC Biomed Engineering, (May 2010 - Dec 2010); lab helper

Jia 'James' Liang, UNC Biology Dept. (May 2010 - Dec 2010); independent study student

John French, UNC Biology Dept. (Sept 2010 - May 2011); independent study student

Jessica Glatz, UNC Biology Dept. (Jan 2011 - Dec 2011); independent study student

Chad Rappleyea, UNC Biology Dept. (Jan 2012 - May 2012); independent study student

Heather Farthing, UNC Biology Dept. (Jan 2012 - Jun 2012); independent study student

Stephen Cooper, UNC Biology Dept. (Jan 2012 – Jul 2013); independent study student

Nathan Spain, UNC Biology Dept. (Jun 2012 – Jul 2014); independent study student

Akash Patlolla, UNC Biology & Chemistry (Jun 2013 - Aug 2014); lab volunteer and independent study student, UNC SURF fellowship awardee

Becky Turner (Jan 2015 - May 2016); independent study student

Holly Pittard (Aug 2015 - May 2016); independent study student, UNC Buckley Public Service Scholar, graduated with honors in Biology

Sean Delaney (Aug 2015 - May 2016); independent study student

Karthika Kandala (Aug 2015 - Sept 2016); independent study student, UNC SURF fellowship awardee

Rita Meganck (May 2015 - Sept 2016); independent study student

Kirsten Adams (May 2015 - Dec 2016); UNC Chancellor's Science Scholar, Hayden B. Renwick Award winner

Akhila Boyina (July 2015 - Dec 2016); lab volunteer, FLAS fellowship awardee

Christine Hamilton, (2016 - 2019); Graduated UNC in 2016, Post-Bac volunteer and paid research assistant.

Maina Edula (Sept 2016 - Dec 2018)

Michela Schillinger, (Jan 2017 - May 2018)

Lisa Samal (Jan 2017 - May 2018)

Helen Dinh (May 2017 - Aug 2017)

Dominique Brown (May 2017 - Aug 2017)

Jennifer Zepeda-Martinez (May - Aug 2017)

Tori Rosen (Sept 2017 - 209)

Sarah Gill (Jan 2018 - May 2018)

Michelle McVay (Jan 2018 - Dec 2018)

Tamara Paris-Davila (Jan 2018 - Dec 2018)

Joseph Giusto (Jan 2018 - May 2019)

Suhana Singh (Jan 2018- May 2019)

Lucy Min (Jan 2018 - Dec 2019)

Dylan Rose (Jan 2018 - Dec 2019)

Sandya Sundar Rajan (Jan 2019 - present)

Meghan Johnson (Jan 2019 - present)

John Clifton Brown (Sept 2019 - Jul 2020)

Sandy Sundar Rajan (May 2019 - Dec 2019)

Sally Boerma, Carleton College summer REU (May 2021 - Aug 2021)

Aadit Mukherjee (Jan 2022 – May 2024)

Ciara Daly (Sept 2022 – Jun 2023)

Julia Saleen (Aug 2023 – present). UNC SURF fellowship awardee

Saleena Dawadi (Jan 2024 – May 2025)

Darshan Ponkiya (Jan 2024 – present)

Lydia Eccleston (Jan 2025 – present)
Anecka Goli (Jan 2025 – present)
Alexis Hirth (Jan 2025 – present)
Grace Vernesoni (Mar 2025 – present)
Whitney Saucier (Sep 2025 – present)
Azriel Carlton (Sept 2025 – present)
Kate McCormack (Sep 2026– present)

High School:

Amy Saltzman, Hathaway Brown School, Science outreach program (May 1999 to Sept 2000). National Semi-Finalist in the Intel science talent search. Subsequently graduated from Princeton University.

Tripurari Mishra, Brush High School, Senior Project and Summer Internship (May 2005 to Sept 2005). Graduated from CWRU, subsequently attended Medical School at St. Louis University.

Lauren Fernandes, Orange High School Senior Project (May 2007). Subsequently graduated from Rensellaer Polytechnic University.

Noah Schofer, Chapel Hill High School, Summer Intern/Volunteer (Jun to Sept, 2013).

Ph.D. Thesis Committees *committee chair (mentor in parens)

University of North Carolina

Lucy Williams (T. Magnuson)
Dierdre Tatomer (Duronio/Marzluff)
Stephen Sojka (F. Conlon)
Ivan Sabath (Dominski/Marzluff)
Glenn Wozniak (B. Strahl)
Felix Peng (Ahmed/Maddox)
Hashem Meriem (B. Strahl)
Rita Meganck (Asokan/Marzluff)
Aaron Crain (B. Duronio)
Patrick Lackey (W. Marzluff)
Shawn Lyons (W. Marzluff)
Marta Szymancinski (F. Conlon)
Esteban Terzo (B. Duronio)
Wes Sanders (A. Laederach)
Taylor Penke (B. Duronio)
Erin Langdon (A. Gladfelter)
Catherine Giannetti (K. Weeks)
Megan Justice (J. Dowen)

Case Western Reserve University

Damon Crumpler* (J. Jacobberger)
Renee LeMaire-Adkins* (P. Hunt)
Tao Tao (A. Tartakoff)
Jeremy Sanford (J. Bruzik)
Alexis Nagengast* (H. Salz)
Suzanne Furuyama (J. Bruzik)
James Amos-Landgraf* (H. Willard)
Katie Rudd* (H. Willard)
Piyali Chatterjee (M. Caprara)
Deena Soni (J. Jacobberger)
Thomas Hattier (A. Tartakoff)
Heather Hall* (T. Hassold)
Michelle Holko (B. Williams)
Hui Zhu (H. Lou)

Proposal Examiner (Biochemistry)
Colleen Nye (R. Hanson)

Christopher Yan* (P. Harte)	Ryan Strachan (B. Roth)
Yali Li (S. Markowitz)	Xuguang Chen (P. Davis)

Grant Support

ACTIVE

R35 GM136435-07 (Matera, PI) 6.1 calendar 04/01/20 - 03/31/30
NIH/NIGMS
Role of histone PTMs in epigenetic control of metazoan transcription and RNA processing. This project fused two previous R01 grants. The current goals are to advance our understanding of epigenetic gene regulation by addressing connections between eukaryotic chromosome packaging, RNP assembly and pre-mRNA processing.
Total Costs for entire project: $6,888,275

MCR0634218 (Matera, PI) 0.0 calendar 07/01/25 - 06/30/26
UNC RIDE program – Lineberger Comprehensive Cancer Center
Identifying small molecules that promote multimerization of Survival Motor Neuron (SMN) protein. As part of the RNA-targeted Innovation for Drug Exploration (RIDE) initiative, this project is aimed at developing a robust biophysical assay for SMN multimer formation with the overall goal to identify bioactive compounds that promote its oligomerization.
Total Costs for entire project: $15,000

COMPLETED

VAH06 (Pattenden, Strahl PIs) 07/01/19-06/30/21
UNC Chancellory
The Creativity Hubs: Integrating scientific fields to enable grand discoveries. Chemical Epigenomics
This is a multidisciplinary, multi-investigator project to leverage chemical biology techniques to interrogate epigenetic processes. Role on project: Co-Investigator.
Direct costs to Matera lab: ~$60,000
Total Costs for entire project: $500,000

R01 GM129132-02 (Matera, PI) 07/13/18 - 03/31/20
NIH/NIGMS
Epigenetic control of metazoan transcription and pre-mRNA processing by histone PTMs
Work here is expected to provide a foundational understanding of how histone $H3^{K36}$ regulates gene expression and chromatin organization across the genome.
Total Costs for entire project: $885,076

1 R01 GM118636-04 (Matera, PI) 04/01/16 - 03/31/20
NIH/NIGMS
In vivo Models of Small RNP Biogenesis and Spinal Muscular Atrophy
This proposal seeks to uncover fundamental information regarding the functions of the SMN complex in both health and disease. Goals are to identify pathways and binding partners that are disrupted by hypomorphic mutations in SMN and to correlate these defects with organismal phenotype.
Total Costs for entire project: $1,186,516

1 R01 DA036897-05 PIs: Matera, Duronio, Strahl
Source: NIH/NIDA (OD), Office of the Director
Titles: "Engineering histone genes to interrogate the epigenetic code in space and time"
Period: 09/15/2013 to 05/31/2018
Total Award: $2,150,456 (40% Matera, 40% Duronio, 20% Strahl)
The goals of this project were to create a sustainable and expandable resource for the general study of histone-mediated epigenetic phenomena and to manipulate histone genotypes in a tissue- and developmental-specific manner.

Grant: R01 GM053034 Role: Principal Investigator
Source: National Institutes of Health, NIGMS
Titles: "Biogenesis of small ribonucleoproteins"
"Organization of ribonucleoproteins in mammalian cells"
Period: 05/01/1996 to 07/31/16
Total Award: $5,160,151

The goals of this project were to uncover the molecular mechanisms by which small ribonucleoproteins (RNPs) are assembled, transported and delivered to their sites of action in order to carry out important cellular and developmental processes such as pre-mRNA splicing and germ cell specification.

Grant: R01 NS041617 Role: Principal Investigator
Source: National Institutes of Health, NINDS
Titles: "Coilin, Cajal Bodies and Spinal Muscular Atrophy"
"Molecular Etiology of Spinal Muscular Atrophy"
Period: 05/01/2001 to 07/31/14
Total Award: $3,622,509

The overall objective of this project was to obtain detailed knowledge of the role played by the SMN protein complex in the biogenesis of ribonucleoproteins as well as in the development and function of the neuromuscular system.

Grant: NCBC Event Support Role: Principal Investigator
Source: North Carolina Biotechnology Center
Title: Symposium on RNA Biology X: RNA Tool and Target
Dates: 10/02/13 to 12/31/13
Total Award: $1,500

Understanding the biology of RNA is an essential investigation for medical, agricultural and environmental research. The meeting focus, to share data and technologies on small RNAs as tools and their potential for targets, is an often overlooked topic. The RNA Society of NC has sponsored this biennial symosium since 1995.

Grant: RG-4070 Role: Principal Investigator
Source: Muscular Dystrophy Association
Title: Gemin4 and Spinal Muscular Atrophy (SMA).
Dates: 01/01/06 to 12/31/08
Total Award: $263,897

The goal of this project was to study *Gemin4* function in the SMN complex *in vivo*, using gene disruptions in mice.

Grant: MAT2006 Role: Mentor/P.I. N/A (Postdoc support)
Source: Families of SMA
Title: A *Drosophila* model for Spinal Muscular Atrophy.
Dates: 01/01/06 to 12/31/06
Total Award: $65,340

This grant provided salary support for a postdoctoral fellow, T.K. Rajendra. No supply money was awarded.

Grant: RG-3290 Role: Principal Investigator
Source: Muscular Dystrophy Association
Title: Spinal Muscular Atrophy (SMA) and snRNA Biogenesis.
Dates: 01/01/02 to 12/31/04
Total Award: $231,156

The goal of this project was to create and study knockout mice bearing mutations in SMN complex proteins, and cross them to existing coilin and SMN knockout strains.

Grant: SAC-2696 Role: Principal Investigator
Source: Muscular Dystrophy Association
Title: Coiled Bodies and Spinal Muscular Atrophy.
Dates: 01/01/99 to 12/31/01
Total Award: $195,162

The goal of this project was to create a mouse model for coiled body function using targeted disruption of the *coilin* gene in mouse embryonic stem cells.

Grant: S10 RR13730 Role: Principal Investigator
Source: National Institutes of Health, NCRR
Title: CWRU Spectral Karyotyping System.
Dates: 04/01/99 to 03/31/00
Total Award: $150,587

This was a shared instrumentation grant for imaging equipment to be used by many investigators throughout the School of Medicine.

Grant: 6-FY98-0637 Role: Principal Investigator
Source: March of Dimes, Basic Research Grant
Title: Haplotype-specific oligoprobes for cytogenetic analysis of human chromosomes.
Dates: 06/01/97 to 05/31/99
Total Award: $115,587

This grant was a competitive renewal of the work begun under the Basil O'Connor Scholar Award. The major goals were to investigate features of human centromeric DNAs and to develop homologue-specific oligonucleotide FISH probes for chromosomes 15 and 16.

Grant: JFRA-570 Role: Principal Investigator
Source: American Cancer Society, Junior Faculty Research Award
Title: Spatial Organization of RNA Processing in Mammalian Cells.
Dates: 07/01/95 to 06/30/98
Total Award: $90,500

Grant: 5-FY96-0554 Role: Principal Investigator
Source: March of Dimes, Basil O'Connor Scholar Award
Title: A Molecular Cytogenetic Analysis of Human Chromosomes Using Highly Specific Oligonucleotide Probes.
Dates: 02/01/95 to 01/31/97
Total Award: $80,000

Grant: DRG-1135 Role: Principal Investigator
Source: Cancer Research Fund, Damon Runyon-Walter Winchell Foundation
Title: A Structure-Function Analysis of Ribonucleoproteins by In Situ Hybridization.
Dates: 05/01/91 to 01/31/94
Total Award: $84,000

Publications

(*Google Scholar* H-index = 66)

Predoctoral

1. Paulson K.E., **Matera A.G.**, Deka N. and Schmid C.W. (1987). Transcription of a Human transposon-like sequence is usually directed by other promoters. *Nucleic Acids Research* **16**: 1143-1151.

2. Deka N., Wong E., **Matera A.G.**, Kraft R., Leinwand L.A. and Schmid C.W. (1988). Repetitive nucleotide sequence insertions into a novel calmodulin-related gene and its processed pseudogene. *Gene* **71**: 123-134.

3. Misra R., **Matera A.G.**, Schmid C.W. and Rush M.G. (1989). Recombination mediates production of an extrachromosomal circular DNA containing a transposon-like human element, THE-1. *Nucleic Acids Research* **17**: 8327-8341.

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