Curriculum Vitae

Alexis C. Komor

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UC San Diego
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EDUCATION

June 2014 — California Institute of Technology
Ph.D. in Chemistry; Cumulative GPA 4.00

December 2008 — University of California, Berkeley
B.S. in Chemistry and Mathematics Minor; Cumulative GPA 3.98

RESEARCH INTERESTS

Research in the Komor lab seeks to integrate the fields of nucleic acid chemistry, DNA damage and repair, protein engineering, directed evolution, and genome editing to develop new laboratory-based methods that facilitate the functional characterization of human genetic variants. Specifically, we engineer new precision genome editing methodologies, mechanistically study how these tools work (from both enzymatic and cellular DNA repair perspectives), and apply these tools to functionally interrogate how specific point mutations contribute to human disease. The long-term goal of my research program is to combat the variant interpretation problem that hampers progress in the field of precision medicine: there are currently over 685 million human single nucleotide variants identified through human sequencing data, and less than 1% have a defined clinical interpretation. This issue is particularly endemic to rare genetic variants and those discovered in minoritized populations and indigenous people, highlighting the need for a significant increase in studies that functionally assess human genetic variants in a more equitable manner.

AWARDS

2024	New Horizons Solvay Lecturer in Chemistry
2022	C&EN News Talented 12
2022	UCSD Undergraduate Research Hub Outstanding Mentor Award
2021	Cottrell Scholar Award
2021	NSF CAREER Award
2020	Endpoints News 20 Under 40 in Biopharma
2020	Fortune Magazine 40 Under 40 in Healthcare Awardee
2020	Rosalind Franklin Medal Award Winner
2019	Scialog Fellow
2017	International Society for Transgenic Technologies Young Investigator
2015-2017	National Institute of Health Ruth L. Kirchstein National Research Service Award Postdoctoral Fellowship
2014	Herbert Newby McCoy Award in Chemistry
2010-2013	National Science Foundation Graduate Research Fellowship
2009-2010	Caltech Institute Fellowship
2009	Graduated with Highest Academic Honors from UC Berkeley
2009	Erich O. and Elly Saegebarth Prize in Chemistry from UC Berkeley
2006-2009	Bruce Howard Memorial Scholarship

TRAINING

2014-2017 — Postdoctoral Scholar with Prof. David R. Liu
Project: Development of base editing

2009-2014 Graduate Researcher with Prof. Jacqueline K. Barton
Project: Development of Metalloinsertors with improved cell-selective anticancer activity

2006-2009 Undergraduate Researcher with Prof. Christopher J. Chang
Project: Design and synthesis of first-row transition metal catalysts for dioxygen activation and group transfer

POSITIONS

2024-present Associate Professor of Chemistry and Biochemistry, UCSD
2023-present Deputy Director of the Sanford Stem Cell Innovation Center, UCSD
2017-2024 Assistant Professor of Chemistry and Biochemistry, UCSD

TEACHING EXPERIENCE

2019-present Chemistry 115/215: Genome, Epigenome, and Transcriptome Editing.
2024-present Chemistry 114A: Biochemistry Structure and Function.
2018-2023 Chemistry 6B: Second quarter of a three-quarter sequence intended for science and engineering majors. Topics include: covalent bonding, gases, liquids, and solids, colligative properties, physical and chemical equilibria, acids and bases, solubility.
2018-2020 Chemistry 116/216: Special Topics in Chemical Biology.

MENTORING EXPERIENCE

Graduate Students			
Name	**Degree**	**Dates**	**Current Position**
Mallory Evanoff (A53245378)	PhD	12/2017-08/2024	Postdoctoral Scholar, UCSD
Brodie Ranzau (A53246848)	PhD	12/2017-08/2023	Postdoctoral Scholar, UCLA
Elizabeth Porto (A53237454)	PhD	12/2017-07/2023	Senior Associate, Clarion
Sifeng Gu (A53213885)	PhD	12/2017-07/2024	Scientist I, General Proximity
Cameron Burnett (A53240953)	PhD	12/2017-01/2023	Scientist I, Poseida
Kartik Rallapalli (A53243334)	PhD	12/2017-08/2022	Scientist I, Metagenomi
Carlos Vasquez (A10141507)	PhD	12/2018-07/2024	Professor of Chemistry, Butte College
Quinn Cowan (A53229284)	PhD	12/2018-06/2024	Postdoctoral Scholar, UCSF
Sam Mawson (A59012749)	PhD in progress	12/2021-present	N/A
Rachel Anderson (A59007507)	PhD in progress	12/2021-present	N/A
Zulfiqar Mohamedshah (A59007571)	PhD in progress	12/2021-present	N/A
Ben Pollak (A15411722)	PhD in progress	12/2022-present	N/A
Natalie Zawalick (A15018014)	PhD in progress	12/2022-present	N/A
Kara Dunne-Dombrink (A13564333)	PhD in progress	12/2022-present	N/A
Zachary Krill	PhD in progress	12/2023-present	N/A
Nicola Osgood	PhD in progress	12/2023-present	N/A
Rohan Pillai	PhD in progress	12/2024-present	N/A
Postdoctoral Fellows			
Name		**Dates**	**Current Position**
P. Keolu Fox		10/2018-08/2019	Assistant Professor of Public Health and Anthropology, UCSD
Zsolt Bodai		06/2018-05/2022	Scientist III, Molecular Assemblies
Michael Hollander		09/2022-present	N/A

Mentor Trainings:

09/2021	HHMI Gilliam Culturally Aware Mentorship Training Program
08/2020 and 08/2021	California Center for Inclusive Doctoral Education (C-CIDE) Workshop
09/2020-09/20201	Center for the Improvement of Mentored Experiences in Research (CIMER), HHMI
03/2020, 03/2023	Faculty Mentoring Training Program Jr. Faculty Training, UCSD
09/2023-11/2023	Building a Respectful and Inclusive Culture (BRIC) Training, UCSD

EXTERNAL SERVICE AND ACTIVITIES

2024-present	Innovative Genomics Institute (IGI) at UC Berkeley, Scientific Advisory Board
2024-present	Standing member, Maximizing Investigators' Research Award - F (MRAF) NIH Study Section
2023-present	Cellular, Tissue, and Gene Therapies Advisory Committee, Food and Drug Administration
2024	Mentor, NSF Division of Chemistry Early Career Investigator Workshop
2023	Co-Chair, "Precise Genome Editing: One Goal, Multiple Avenues" Session, 2023 ASGCT 26th Annual Meeting
2022	Co-Organizer, 2022 PQG Conference: Emerging challenges and opportunities in gene editing
2022	Ad Hoc Member, NIGMS Council
2021	Panelist, Stifel Key Opinion Leaders Virtual Panel series
2021	Panelist, Young Presidents' Organization of Los Angeles, "The Future of Life" event
2021-present	Ad Hoc Reviewer for NIH Developmental Biology (CHHD-C), Enabling Bioanalytical and Imaging Technologies (EBIT), Synthetic and Biological Chemistry A (SBCA), Special Emphasis Panel of Pathway to Independence Award (ZGM1 TWD-8 KR), Maximizing Investigators' Research Award - F (MRAF), and Training in Veterinary and Comparative Medicine (ZRG1 MCST-J 80) Study Sections
2021	Guest Speaker with Minnesota Public Radio News
2020	Co-Organizer, Synthetic Biology Approaches to Improve Human and Environmental Health Virtual Symposium
2020	Panelist, First Fridays: The Future of Medicine, Los Angeles Natural History Museum
2019-present	Co-Organizer, International Conference on Base Editing
2018-present	Mentor for the Sloan Scholar Fellowship Program
2018-present	Mentor/ Workshop Host for BEWiSE (Better Education for Women in Science and Engineering)
2018-present	Co-Organizer, International Conference on CRISPR Technologies (2018 and 2021)
2018	Panelist, Physical Sciences and Mathematics session, California Forum for Diversity in Graduate Education
2018	Panelist, "Gene Editing" panel discussion, 2nd Annual SABPA Frontiers in Therapeutics and Diagnostics Forum
2017-present	Manuscript reviewer for *Nature, Nature Biotechnology, Science, New England Journal of Medicine, Nature Communications, Nature Medicine, Journal of the American Chemical Society, Nucleic Acids Research, Nature Structural and Molecular Biology, The CRISPR Journal, Science Advances, Cell, Cell Stem Cell, Proceedings of the National Academy of Sciences, Nature Methods, ACS Synthetic Biology, ACS Biochemistry, Nature Chemical Biology, Nature Cell Biology, Angewandte Chemie, PLoS Genetics, Nature Protocols,* and *Molecular Therapy.*
2017-2019	Consultant for Beam Therapeutics
2017-present	Consultant and Scientific Advisory Board member for Pairwise Plants

FUNDED PROJECTS

DISC0-13808 01/01/2023-12/31/2025

California Institute of Regenerative Medicine (CIRM) Discovery Stage Research Project

“Development of a stem-cell based approach to interpret global effects of genetic variants contributing to neurodevelopmental disease risk”
Role: Multi-PI

T32GM146648 07/01/2022-06/30/2027
Chemistry-Biology Interfaces Training Grant at UCSD
Role: Multi-PI

28385
Scialog Collaborative Award 01/01/2022-12/31/2022
“Elucidating the polygenic origins of schizophrenia: Linking protein trafficking to synapse function”
Role: PI

27975
Cottrell Fellowship Award 09/01/2021-08/31/2022
“Investigations of DNA Repair Genes’ Involvement in Base Editing and Development of a hands-on undergraduate course on Genome Editing at UCSD”
Role: PI

27502
Cottrell Scholar Award 07/01/2021-06/31/2024
“Harnessing Precision Genome Editing tools to Study DNA Repair Proteins in Live Cells”
Role: PI

2048207 02/01/2021-01/31/2026
NSF Faculty Early Career Development Program Award
“CAREER: Investigating the DNA Repair Mechanisms of Non-Traditional Genome Editing Agents”
Role: PI

R35GM138317 09/01/2020-08/31/2025
Maximizing Investigators’ Research Award
“Development and Application of New Genome Editing Tools for the Functional Investigation of Genetic Variants of Uncertain Significance”
Role: PI

GBMF9162.12 03/14/2020-05/14/2021
Scialog Collaborative Award
“Understanding the Dark Side of the Genome”
Role: PI

R21 GM135736-01 09/20/2019-08/31/2021
Exploratory Research for Technology Development
“Development of New Genome Editing Agents Using RNA Modifying Enzymes”
Role: PI

Beam Therapeutics SRA 05/30/2019-05/29/2020
“Development of a system for the comprehensive identification of DNA repair proteins involved in genome editing outcomes”
Role: PI

15-172-45-IRG 12/22/2017-12/21/2018
American Cancer Society Institutional Research Grant
“A biochemical characterization of the contributions of nucleotide excision repair to cancer and aging”
Role: PI

F32 GM112366 4/1/2015-6/30/2017

Ruth L. Kirschstein National Research Service Award
"Development and validation of a precision genome editing platform"
Role: PI

PUBLICATIONS

Evanoff, M.; Korpal, S.; Cowan, Q. T.; **Komor, A. C.*** "Directed Evolution Reversion Analysis Produces Minimally Evolved Adenine Base Editor Variants with Improved Efficiency and Precision," *In Review*.

Porto, E. M.; **Komor, A. C.*** "Exploring the Cell Cycle Dependence of Prime Editing," *In Revision*.

Gu, S.; Bodai, Z.; Anderson R. A.; So, H. Y. A.; Cowan, Q. T.; **Komor, A. C.*** "Elucidating the Genetic Mechanisms Governing Cytosine Base Editing Outcomes Through CRISPRi Screens," *Nat. Commun*. **2025**, *16*, 4685.

Gropman, A. L.; Komor, A. C.* "Personalized Gene Editing to Treat an Inborn Error of Metabolism," *N. Engl. J. Med.* In Press.

Osgood, N. R. B.; Zawalick, N. M.; Sawyer, C. B.; Cowan, Q. T.; Mawson, S. J.; Ranzau, B. L; Li, L.; Gymrek, M.; Goren, A.; **Komor, A. C.*** "Genome Editing with Programmable Base Editors in Human Cells," *Methods in Enzymol.* **2025**, *712*, 351-404.

Vasquez, C. A.; Osgood N.R.B.; Zepeda, M. U.; Sandel, D. K.; Cowan, Q. T.; Peiris, M. N.; Donoghue, D. J.; **Komor, A. C.*** "Precision Genome Editing and In-Cell Measurements of Oxidative DNA Damage Repair Enable functional and Mechanistic Characterization of Cancer-Associated MUTYH Variants," *Nucleic Acids Res.* **2025**, *53*, gkaf037.

Cowan, Q. T.; Gu, S.; Gu. W.; Ranzau, B. L.; Simonson, T. S.; **Komor. A. C.*** "Development of Multiplexed Orthogonal Base Editor (MOBE) Systems," *Nat. Biotechnol.* **2025**, *43*, 593-607.

Cowan, Q. T.; **Komor, A. C.*** "Genome editing with DNA-dependent polymerases," News & Views at *Nat. Biotechnol.* **2024**. doi.org/10.1038/s41587-024-02372-3.

Moffat, J.*; **Komor, A. C.***; Lum, L.* "Impact of CRISPR in cancer drug discovery," *Science* **2024**, *386*, 378-379.

Medina-Munoz, H. C.; Kofman, E.; Jagannatha, P.; Boyle, E. A.; Yu, T.; Jones, K. L.; Mueller, J. R.; Lykins, G. D.; Doudna, A. T.; Park, S. S.; Blue, S. M.; Ranzau, B. L.; Kohli, R. M.; **Komor, A. C.**; Yeo, G. W. "Expanded Palette of RNA Base Editors for Comprehensive RBP-RNA Interactome Studies," *Nat. Commun*. **2024**, 15, 875.

Lawrence, E. S.; Gu, W.; Bohlender, R. J.; Anza-Ramirez, C.; Cole, A. M.; Yu. J. J.; Hu. H.; Heinrich, E. C.; O'Brien, K. A.; Vasquez, C. A.; Cowan, Q. T.; Bruck, P. T.; Mercader, K.; Alotaibi, M.; Long, T.; Hall, J. E.; Moya, E. A.; Bauk, M. A.; Reeves, J. J.; Kong, M. C.; Salem, R. M.; Vizcardo-Galindo, G.; Macarlupu, J.; Figueroa-Mujica, R.; Bermudez, D.; Corante, N.; Gaio, E.; Fox, P. K.; Salomaa, V.; Havulinna, A. S.; Murray, A. J.; Malhotra, A.; Powel, F. L.; Jain, M.; **Komor. A. C.**; Cavalleri, G. L.; Huff, C. D.; Villafuerte, F. C.; Simonson, T. S.; "Functional EPAS1/HIF2A missense variant is associated with hematocrit in Andean highlanders," *Sci. Adv.* **2024**, *10*, eadj5661.

Vasquez, C. A.; Evanoff, M.; Ranzau, B. L.; Dieters, E.; **Komor, A. C.*** "Curing 'GFP-itis' in Bacteria with Base Editors: Development of a Genome Editing Science Program Implements with High School Biology Students," *CRISPR J.* **2023**, *6*, 186-195.

Ranzau, B. L.; Rallapalli, K. L.; Evanoff, M.; Paesani, F.; **Komor, A. C.*** "The wild-type tRNA adenosine deaminase enzyme TadA is capable of sequence-specific DNA base editing," *ChemBioChem*, **2023**, e202200788.
Designated a "Very Important Paper", or top 10% of *ChemBioChem* articles. *Cover Article.*

Porto, E. M.; **Komor, A. C.*** "In the business of base editors: Evolution from bench to bedside," *PLoS Biol.* **2023**, *21*, e3002071.

Rallapalli, K. L.; **Komor, A. C.*** "The Design and Application of DNA Editing Enzymes as Base Editors," *Annu. Rev. Biochem.* **2023**, *92*, 43-79.

Vasquez, C. A.; **Komor, A. C.** "Chemical Biology of Genome Engineering" *Advanced Chemical Biology: Chemical Dissection and Reprogramming of Biological Systems,* edited by Howard Hang, Matthew Pratt, and Jennifer Prescher, Wiley, **2023**, 99-134. ISBN:978-3-527-34733-9.

Burnett, C. A.; Wong, A. T.; Vasquez, C. A.; McHugh, C. A.; Yeo, G. W.; **Komor, A. C.*** "Investigations of the Cell Cycle Dependence of Cytosine and Adenine Base Editors," *Front. Genome Ed.* **2022**, *4*, 923718.

Bodai, Z.; Bishop, A. L.; Gantz, V. M.; **Komor, A. C.*** "Targeting Double Strand Break Indel Byproducts with Secondary Guide RNAs Improves Cas9 HDR-Mediated Genome Editing Efficiencies," *Nat. Commun*. **2022**, *13*, 2351.

Bishop, A. L.; Lopez del Amo, V.; Okamoto, E.; Bodai, Z.; **Komor, A. C.**; Gantz, V. M. "Double-Tap Gene Drive: Iterative Genome Targeting Helps Overcome Resistance Alleles," *Nat. Commun*. **2022**, *13*, 2595.

McDaniel, S.; **Komor, A. C.***; Goren, A.* "The Use of Base Editing Technology to Characterize Single Nucleotide Variants," *Comput. Struct. Biotechnol. J.* **2022**, *20*, 1670-1680.

Rallapalli, K. L.*; Ranzau, B. L.; Ganapathy, K. R.; Paesani, F.*; **Komor, A. C.*** "Combined Theoretical, Bioinformatic, and Biochemical Analyses of RNA Editing by Adenine Base Editors," *CRISPR J.* **2022**, *5*, 294-310.

Weng, N.; Miller, M.; Pham, A. K.; **Komor, A. C.**; Broide, D. H. "Single base editing of rs12603332 on Chromosome 17q21 with a Cytosine Base Editor regulates ORMDL3 and ATF6a expression," *Allergy* **2022**, *77*, 1139-1149.

Rees, H. A.; Minella, A. C.; Burnett, C. A.; **Komor, A. C.***; Gaudelli, N. M.* "CRISPR-derived Genome Editing Therapies: Progress From Bench to Bedside," *Mol. Ther.* **2021**, *29*, 1-15.

Gu, S.; Bodai, Z.; Cowan, Q. T.; **Komor, A. C.*** "Base Editors: Expanding the Types of DNA Damage Products Harnessed for Genome Editing," *Gene and Genome Editing* **2021**, *1*, 100005.

Gaudelli, N. M.*; **Komor, A. C.*** "Celebrating Rosalind Franklin's Centennial with a Nobel Win for Doudna and Charpentier," *Mol. Ther.* **2020**, *28*, 2519-2520. Editorial piece; not peer-reviewed.

Vasquez, C. A.; Cowan, Q. T.; **Komor, A. C.*** “Base Editing in Human Cells to Produce Single Nucleotide Variant Clonal Cell Lines,” *Curr. Protoc. Mol. Biol.* **2020**, *133*, e129.

Porto, E. M.; **Komor, A. C.***; Slaymaker, I. M.; Yeo, G. W. “Base Editing: Advances and Therapeutic Opportunities,” *Nat. Rev. Drug Disc.* **2020**, *19*, 839.

Rallapalli, K. L.; **Komor, A. C.***; Paesani. F.* “Computer Simulations Explain Mutation-induced Effects on DNA Editing by Adenine Base Editors,” *Sci. Adv.* **2020**, *6*, eaaz2309.

Quinn, R. A. *et al*. “Global Effects of the Microbiome Include New Bile-acid Conjugations,” *Nature*, **2020**, *579*, 123-129.

Fox, K.; Rallapalli, K. L.; **Komor, A. C.*** “Rewriting Human History and Empowering Indigenous Communities with Genome Editing Tools,” *Genes*, **2020**, *11*, 88.

Evanoff, M.; **Komor, A. C.*** “Base Editors: Modular Tools for the Introduction of Point Mutations in Living Cells,” *Emerging Topics in Life Sciences*, **2019**, ETLS20190088.

Davies, K.; **Komor, A. C.**; Gaudelli, N.M. “The Beginning of Base Editing: An Interview with Alexis C. Komor and Nicole M. Gaudelli,” *The CRISPR Journal*, **2019**, *2*, 81-90. Podcast interview; not peer-reviewed.

Ranzau, B. L.; **Komor, A. C.*** “Genome, Epigenome, and Transcriptome Editing via Chemical Modification of Nucleobases in Living Cells,” *Biochemistry*, **2019**, *58*, 330-335.

Gaudelli, N. M.; **Komor, A. C.**; Rees, H. A.; Packer, M. S.; Badran, A. H.; Bryson, D. I.; Liu, D. R. “Programmable Base Editing of A•T to G•C in Genomic DNA without DNA Cleavage,” *Nature* **2017**, *551*, 464-471.

Komor, A. C.*; Badran, A. H.*; Liu, D. R.* “Editing the Genome Without Double-Stranded DNA Breaks,” *ACS Chem. Biol.* **2018**, *13*, 383-388.

Komor, A. C.; Zhao, K. T.; Packer, M. S.; Gaudelli, N. M.; Waterbury, A. L.; Koblan, L. W.; Badran, A. H.; Liu, D. R. “Improved Base Excision Repair Inhibition and Bacteriophage Mu Gam Protein Yields C:G-to-T:A Base Editors with Higher Efficiency and Product Purity,” *Sci. Adv.* **2017**, *3*, eaao4774**.**

Rees, H. A.; **Komor, A. C.**; Yeh, W. H.; Caetano-Lopes, J.; Warman, M.; Edge, A. S. B.; Liu, D. R. “Improving the DNA specificity and applicability of base editing through protein engineering and protein delivery,” *Nat. Commun.* **2017**, *8*, 15790.

Kim, Y. B.; **Komor, A. C.**; Levy, J. M.; Packer, M. S.; Zhao, K. T.; Liu, D. R. “Increasing the genome-targeting scope of base editing with engineered Cas9-cytidine deaminase fusions,” *Nat. Biotechnol.* **2017**, *35*, 371-376.

Komor, A. C.; Badran, A. H.; Liu, D. R. “CRISPR-based technologies for the manipulation of eukaryotic genomes,” *Cell* **2017**, *168*, 20-36.

Komor, A. C.; Kim, Y. B.; Packer, M. S.; Liu, D. R. “Programmable editing of a target base in genomic DNA without double-stranded DNA cleavage,” *Nature* **2016**, *533*, 420-424.

Komor, A. C.; Barton, J. K. "An Unusual Ligand Coordination Gives Rise to a New Family of Rhodium Metalloinsertors with Improved Selectivity and Potency," *J. Am. Chem. Soc.* **2014**, *136,* 14160-14172.

Weidmann, A. G.; **Komor, A. C**.; Barton, J. K. "Targeted Therapy with Metal Complexes," *Comment. Inorg. Chem.* **2014,** *34*, 1-10.

Bailis, J. M.; Gordon, M. L.; Gurgel, J. L.; **Komor, A. C.**; Barton, J. K.; Kirsch, I. R. "An Inducible, Isogenic Cancer Cell Line System for Targeting the State of Mismatch Repair Deficiency," *PLOS ONE,* **2013**, *10*, e78726.

Weidmann, A. G.; **Komor, A. C.**; Barton, J. K. "Biological Effects of Simple Changes in Functionality on Rhodium Metalloinsertors," *Philos. Trans. R. Soc. A.,* **2013**, *371*, 20120117.

Komor, A. C.; Barton, J. K. "The Path for Metal Complexes to a DNA Target," *Chem. Commun.* **2013**, *49*, 3617-3630. *Cover Article*

Komor, A. C.; Schneider, C. J.; Weidmann, A. G.; Barton, J. K. "Cell-Selective Activity of Rhodium Metalloinsertors Correlates with Subcellular Localization," *J. Am. Chem. Soc.* **2012**, *134,* 19223-19233.

Ernst, R. J.; **Komor, A. C.**; Barton, J. K. "Selective Cytotoxicity of Rhodium Metalloinsertors in Mismatch Repair-Deficient Cells," *Biochemistry* **2011**, *50,* 10919-10928.

Soo, H. S.; **Komor, A. C.**; Iavarone, A. T.; Chang, C. J. "A Hydrogen-Bond Facilitated Cycle for Oxygen Reduction by an Acid- and Base-Compatible Iron Platform," *Inorg. Chem.* **2009**, *48,* 10024-10035.

*Indicates corresponding author

INVITED TALKS

"Engineering and Evolving Nucleic Acid Modifying Enzymes," *CRISPR and Beyond: Perturbations at Scale to Understand Genomes* **April 3, 2025,** Hinxton, UK.

"Development and Characterization of Precision Genome Editing Tools," *American Chemical Society Spring 2025 Meeting* **March 25, 2025,** San Diego, CA.

"Engineering and Evolving Nucleic Acid Modifying Enzymes," *6th International Conference on Base Editing, Prime Editing, and Related Enzymes* **January 22, 2025,** Palm Springs, CA.

"Development and Characterization of Precision Genome Editing Tools," *Molecular Therapeutics Seminar Series, UC Berkeley* **December 5, 2024,** Berkeley, CA.

"Understanding Human Genetic Variation with Precision Genome Editing Tools," *New Horizons Solvay Lectures* **November 7, 2024,** De Duve Institute UCLouvain, Woluwe-Saint-Lambert, Belgium.

"Engineering and Evolving Nucleic Acid Modifying Enzymes," *New Horizons Solvay Lectures* **November 6, 2024,** University of Ghent, Ghent, Belgium.

"Development and Characterization of Precision Genome Editing Tools," *New Horizons Solvay Lectures* **November 5, 2024,** Universite Libre de Bruxelles and Vrije Universiteit Brussel, Brussels, Belgium.

"Development and Characterization of Precision Genome Editing Tools," *A.I. Scott Medal Symposium for Biological Chemistry* **October 11, 2024,** College Station, TX.

“Development and Characterization of Precision Genome Editing Tools,” *Biomolecular Horizons 2024* **September 25, 2024,** Melbourne, Australia. Keynote Address

“Development and Characterization of New Precision Genome Editing Tools,” *FASEB Conference on Genome Engineering: Research and Applications* **June 17, 2024,** Rome, Italy.

“Understanding Human Genetic Variation with Precision Genome Editing Tools,” *2024 Sanford Burnham Prebys Annual Graduate School of Biomedical Sciences Retreat* **May 10, 2024**, Carlsbad, CA. Keynote Address

“Development and Characterization of New Precision Genome Editing Tools,” *NCI RNA Biology Initiative Workshop: RNA Therapeutics* **April 23, 2024,** Rockville, MD.

“Development and Characterization of Precision Genome Editing Tools,” *Janelia Conference*, *Chemical Tools for Complex Biological Systems III* **March 28, 2024,** Ashburn, VA.

“Mechanisms of Base Editing,” *Keystone Symposia, Precision Genome Engineering* **January 24, 2024,** Banff, AB, Canada.

“Elucidating the Genetic Mechanisms Governing Cytosine Base Editing Outcomes,” *Frontiers in Genome Editing 2023* **November 16, 2023**, Goa, India.

“Understanding Human Genetic Variation with Precision Genome Editing Tools,” *MIT Program in Polymers and Soft Matter Seminar Series* **November 1, 2023**, Cambridge, MA.

“Development and Characterization of Precision Genome Editing Tools,” *Cracking the Code: The Dawn of Nucleic Acid Medicines* **October 19, 2023**, Worcester, MA.

“Understanding and Engineering Precision Genome Editing Tools,” *International Chemical Biology Society 2023 Annual Conference* **October 11, 2023**, Ann Arbor MI.

“Understanding Human Genetic Variation with Precision Genome Editing Tools,” *University of Wisconsin at Madison, Department of Biochemistry Fall 2023 Colloquium Seminar Series* **September 11, 2023**, Madison, WI.

“Understanding Human Genetic Variation with Precision Genome Editing Tools,” *6th Annual CIRM Alpha Clinic Network Symposium* **September 8, 2023**, Irvine, CA.

“Understanding Human Genetic Variation with Precision Genome Editing Tools,” *Cold Spring Harbor Laboratory Meeting Genome Engineering: CRISPR Frontiers* **August 19, 2023**, Cold Spring Harbor, NY.

“Understanding Human Genetic Variation with Precision Genome Editing Tools,” *Broad Institute Chemical Biology Supergroup* **June 21, 2023**, Cambridge, MA.

“Development and Characterization of Multiplexed Orthogonal Base Editing Systems,” *American Society of Cell and Gene Therapy 26th Annual Meeting* **May 19, 2023**, Los Angeles, CA.

“Understanding Human Genetic Variation with Precision Genome Editing Tools,” *University of Texas Health San Antonio, Biochemistry and Structural Biology Seminar Series* **April 14, 2023**, San Antonio, TX.

“Understanding Human Genetic Variation with Precision Genome Editing Tools,” *University of California, Berkeley Structural, Chemical & Quantitative Biology Seminar Series* **April 11, 2023**, Berkeley, CA.

“Development and Characterization of Multiplexed Orthogonal Base Editing Systems,” *RNA Editing Gordon Research Conference* **March 22, 2023,** Ventura, CA.

“Development and Characterization of Precision Genome Editing Tools,” *Swiss CRISPR Symposium 2023* **February 9, 2023,** Zurich, Switzerland.

“Understanding Human Genetic Variation with Precision Genome Editing Tools,” *The 6th International Conference on Disability and Rehabilitation* **December 4, 2022,** Riyadh, Saudi Arabia.

“Development and Application of Precision Genome Editing Tools to Study Human Genetic Variants,” *Wellcome Genome Campus Genetic Engineering of Mammalian Stem Cells Course* **November 3, 2022,** remote presentation.

“Understanding Human Genetic Variation with Precision Genome Editing Tools,” *Caltech Organic Seminar Series* **October 12, 2022**, Pasadena, CA.

“Base Editing in Practice,” *Lab Meetings Live: CRISPR methods, techniques & advice (BiteSize Bio virtual conference)* **September 21, 2022**, remote presentation.

“Understanding Human Genetic Variation with Precision Genome Editing Tools,” *13th International Conference on Environmental Mutagens* **September 1, 2022**, Ottawa, Canada.

“Understanding Human Genetic Variation with Precision Genome Editing Tools,” *Genome Writers Guild Conference 2022* **July 28, 2022**, remote presentation.

“Understanding Human Genetic Variation with Precision Genome Editing Tools,” *University of California, Santa Barbara Molecular, Cellular, and Developmental Biology Departmental Seminar Series* **June 8, 2022**, Santa Barbara, CA.

“Understanding Human Genetic Variation with Precision Genome Editing Tools,” *University of California, Irvine Department of Pharmaceutical Sciences Seminar Series* **May 18, 2022**, Irvine, CA.

“Cellular Processing of Base Editor Intermediates,” *Keystone Symposia, Precision Genome Engineering* **April 28, 2022,** Keystone, CO.

“Understanding How Cells Process Base Editor Intermediates,” *3nd International Conference on Base Editing – Enzymes and Applications* **January 25, 2022**, Palm Springs, CA.

“Investigations of the Enzymatic and Cellular Mechanisms of Base Editors,” *Pacifichem 2021* **December 18, 2021**, remote presentation.

“Enhancing Genome Editing Precision Using Secondary gRNAs,” *Penn Center for Genome Integrity Seminar Series (University of Pennsylvania)* **December 6, 2021**, remote presentation.

“Genome Editing with Alternative DNA Damage Intermediates,” *Inserm Workshop CRISPR-Cas9: yet more breakthroughs and challenges* **October 20, 2021**, Bordeaux, France.

“Understanding the Impact of Genetic Variation on Human Health,” *Claremont Colleges Chemistry Seminar Series* **October 12, 2021**, remote presentation.

“Enabling Functional Genomics with DNA Base Editors,” *University of California, San Francisco Genomic Immunology Seminar Series* **September 27, 2021**, remote presentation.

“Investigating the Enzymatic and Cellular Mechanisms of Base Editing,” *Genome Engineering and Synthetic Biology Conference* **September 23, 2021**, remote presentation.

“Understanding Human Genetic Variation with Precision Genome Editing Tools,” *University of Michigan RNA, CRISPR, and Genome Editing Thematic Virtual Seminar Series* **September 21, 2021**, remote presentation.

“Investigations of the Cellular Mechanisms of Base Editing,” *American Chemical Society Fall 2021 Meeting* **August 22, 2021**, remote presentation.

“Investigating the Enzymatic and Cellular Mechanisms of Base Editing,” *Cold Spring Harbor Laboratory Meeting Genome Engineering: CRISPR Frontiers* **August 18, 2021**, remote presentation.

“Mechanistic Insights into Adenine Base Editors,” *Genome Writers Guild Conference 2021* **July 30, 2021**, remote presentation.

“Enabling the Functional Genomics Field with Base Editors,” *MIT Bioinformatics Seminar* **April 7, 2021,** remote presentation.

“Mechanistic Insights into Cytosine and Adenine Base Editors,” *ELRIG CRISPR in Drug Discovery* **March 24, 2021,** remote presentation.

“Understanding the Impact of Genetic Variation on Human Health,” *CaliBaja Webinars* **March 17, 2021**, remote presentation.

“Mechanistic Insights into Adenine Base Editors,” *2nd International Conference on Base Editing – Enzymes and Applications* **January 22, 2021**, remote presentation.

“Investigating the Enzymatic Mechanisms of Base Editing,” *The International CRISPR and Gene Editing Symposium* **September 23, 2020,** remote presentation; Keynote speaker.

“Investigating the Enzymatic and Cellular Mechanisms of Base Editing,” *Genome Writers Guild Conference 2020* **July 25, 2020,** remote presentation. Rosalind Franklin Award Talk.

“Investigating the Enzymatic and Cellular Mechanisms of Base Editing,” *University of Pennsylvania Chemistry-Biology Interfaces Summer Retreat* **July 24, 2020,** remote presentation.

“Investigating the Chemical and Cellular Mechanisms of Base Editing,” *World Congress on In Vitro Biology* **June 10, 2020,** remote presentation.

“Base Editing: Performing Chemistry on the Genome,” *Genome Editing: Sequencing and Innovation* Cell Press Webinars, **December 4, 2019,** remote presentation.

“Investigating the Chemical and Cellular Mechanisms of Base Editing,” *Frontiers in Genome Engineering* **November 25, 2019,** Kobe, Japan.

“Repurposing Viral Defense Enzymes for Genome Editing,” *The American Society for Virology 38th Annual Meeting Satellite Symposia* **July 20, 2019,** Minneapolis, MN.

“Engineering and Evolving Base Editors for the Chemical Modification of DNA Nucleobases,” *Synthetic Biology Gordon Research Conference* **July 15, 2019,** Waterville Valley, NH.

“Base Editing: Performing Chemistry on the Genome,” *Drug Information Association Global Annual Meeting* **June 25, 2019,** San Diego, CA.

“Functionally Characterizing Variant of Uncertain Significance Using Base Editors,” *7th Annual Coffey-Holden Prostate Cancer Academy Meeting* **June 22, 2019,** Los Angeles, CA.

“Expanding the Genome Editing Toolbox with Base Editors,” *Janelia Conference*, *Chemical Tools for Complex Biological Systems II* **May 1, 2019,** Ashburn, VA.

“Base Editing: Using Uracil and Inosine as Genome Editing Intermediates,” *UC Irvine Department of Biological Chemistry Lecture Series* **April 24, 2019,** Irvine, CA.

“Base Editing: Performing Chemistry on the Genome,” *Pathology Research Lecture Series, UCSD Department of Pathology* **April 8, 2019,** San Diego, CA.

“Expanding the Genome Editing Toolbox with Base Editors,” *Wellcome Genome Campus Advanced Courses: Genetic Engineering of Mammalian Stem Cells* **March 21, 2019,** Wellcome Genome Campus, Cambridge, UK.

“Using Uracil as a Genome Editing Intermediate,” *Keystone Symposia, Genome Engineering: From Mechanisms to Therapies* **February 20, 2019,** Victoria, British Columbia Canada.

“Beyond Double Stranded DNA Breaks: Using Uracil and Inosine as Genome Editing Intermediates,” *2nd International Conference on CRISPR Technologies* **December 10, 2018,** San Diego, CA.

“Base Editing: Performing Chemistry on the Genome,” *Genome and Transcriptome Engineering Conference* **October 15, 2018,** La Jolla, CA.

“Base Editing: Performing Chemistry on the Genome,” *California State University, Los Angeles Minority Opportunities in Research (MORE) Seminar Series* **September 28, 2018,** Los Angeles, CA.

“Base Editing: Performing Chemistry on the Genome,” 3*rd Annual Buffalo Niagara Medical Campus* (*BNMC) Translational Genomics and Epigenomics Symposium* **September 18, 2018,** Buffalo, NY; Keynote Talk.

“Programmable editing of a target base in genomic DNA without double-stranded DNA cleavage,” *Yale School of Medicine Rare Disease Seminar* **June 1, 2018,** New Haven, CT (remote presentation).

“Base Editing: Performing Chemistry on the Genome,” *American Society of Cell and Gene Therapy 21st Annual Meeting* **May 15, 2018,** Chicago, IL.

“Base Editing Workshop,” *Max Planck Institute for Infection Biology* **April 20, 2018,** Berlin, Germany.

“Base Editing: Performing Chemistry on the Genome,” *Innovative Genomics Institute* **April 16, 2018,** Berkeley, CA.

“A New Approach to Genome Editing,” *Mass Spectrometry: Applications to the Clinical Lab 10th Annual Conference & Exhibit* **January 25, 2018,** Palm Springs, CA; Plenary Talk.

“A New Approach to Genome Editing,” *International Society of Transgenic Technologies Conference* **October 4, 2017,** Snowbird, CO; Young Investigator Awardee.

“A New Approach to Genome Editing,” *Genome Engineering 4.0* **May 2016,** Cambridge, MA.

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“Genome editing systems for multiplexing point mutation introduction in living cells” Komor, A. C.; Cowan, Q T. PCT Application No. PCT/US23/66812

“Methods for improving genome editing” Gantz, V.; Bishop, A. L.; Komor, A. C.; Bodai. Z. PCT Application No. PCT/US22/43004

“Nucleobase editors comprising nucleic acid programmable DNA binding proteins” Liu, D. R.; Komor, A. C.; Chen, L.; Rees, H. A. US Patent 11,268,082

“Nucleobase editors and uses thereof” Liu, D. R.; Komor, A. C.; Rees, H. A.; Kim, Y. US Patent 11,214,780

“Cas variants for gene editing” Liu, D. R.; Komor, A. C. US Patent 11,124,782

“Fusions of Cas9 domains and nucleic acid-editing domains” Liu, D. R.; Komor, A. C. US Patent 11,053,481

“Methods for nucleic acid editing” Liu, D. R.; Komor, A. C. US Patent 9,840,699

“Methods for correcting presenilin point mutations” Liu, D. R.; Komor, A. C. US Patent 9,068,179

“Metalloinsertor complexes targeted to DNA mismatches” Barton, J. K.; Komor, A.C.; Schneider, C. J.; Weidmann, A. G.; Ernst, R. J. US Patent 9,051,345