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Haruhiko Siomi

PERSONAL DATA

Name:	Haruhiko Siomi
Nationality:	Japan
Date of Birth	June 11, 1959
Work address:	cNIVR, Chiba University
	1-8-1 Inohana, Chiba 260-8670, Japan
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EDUCATION

1982	B.A. Agricultural Chemistry *Valedictorian*, Gifu University, Gifu, Japan
1984	M.A. Organic Chemistry, Gifu University
1988	Doctor of Medical Science (equivalent to Ph.D.) Virology, Kyoto University, Japan

AWARDS

2025	The Enshu-Shoutokukai Genetics Incentive prize
2024	Mitsubishi Foundation award for Basic Natural Sciences
2023	The Sumitomo Foundation Award
2021	The Uehara Memorial Foundation Award
2011	Takeda Foundation award for Sciences
2010	Mitsubishi Foundation award for Basic Natural Sciences
2008	The Naito Foundation Award
2008	The Uehara Memorial Foundation Award
2006	Takeda Science Foundation Award
2003	FRAXA Research Foundation Award
2000	Cure Autism Now (CAN) Foundation Pilot Research Award
1999	FRAXA Research Foundation Award
1998	MRDDRC (Mental Retardation and Developmental Disabilities Research Center) Young Investigator Award
1989	TONEN Fundamental Research Prize (nominated by Molecular Biology Society of Japan)
1988	Fellowship of the Japan Society for the Promotion of Science for Japanese Junior Scientists

PROFESSIONAL EXPERIENCE

2025- : Project Professor at cNIVR, Chiba University, Chiba, Japan
Professor Emeritus, Keio University
2008-2025: Chair and Professor, Department of Molecular Biology, Keio University School of Medicine, Tokyo, Japan
2021-2023: Vice Dean (in charge of Research) Keio University School of Medicine
2022-2025: WPI Bio2Q, PI and Administrative Director, Keio University
2008-present: Visiting Professor, Institute of Advanced Medical Sciences, Tokushima University
2018-present: Guest Professor, Research Institute for Microbial Diseases, Osaka University
1999-2008: Professor, Institute for Genome Research, University of Tokushima, Tokushima, Japan
1997-1999: Research Assistant Professor, Department of Biochemistry and Biophysics, University of Pennsylvania School of Medicine
1996-1997: Research Associate, University of Pennsylvania School of Medicine
1990-1996: Associate, Howard Hughes Medical Institute, University of Pennsylvania School of Medicine, (adviser: Dr. Gideon Dreyfuss)
1988-1990: JSPS Research Fellow, Institute for Virus Research, Kyoto University, Japan (adviser: Professor Yoshiaki Ito & Dr. Hisatoshi Shida)

PROFESSIONAL MEMBERSHIP

Member	The RNA Society (Organizer of the 2011 annual Meeting at Kyoto; Director, 2017 – 2018; member of the 2021 RNA Society Nominating Committee)
President	The RNA Society of Japan (2010-2014)
Member	The Molecular Biology Society of Japan (Board member 2010-2013, 2015- 2018, 2021-2024; Vice President)
Co-Chair	Tokyo RNA Club (2008- present)

UNIVERSITY ACTIVITIES (Keio University)

2008-2025	Thesis advisory committee member, Keio University
2015-2024	Committee for The Keio Medical Science Prize, (2020-2023, Chair)
2015-2023	Director of RI Technical Training Center the Keio University School of Medicine
2015-2023	Director of Genetic Modification Safety Committee the Keio University School of Medicine
2016-2019	Director of Committee on Research Development the Keio University School of Medicine
2019-2024	JKiC (JSR-Keio Innovation Center) adviser
2021-2023	Vice Dean (in charge of research), Keio University School of Medicine

TEACHING

2000-2025	Introductory Molecular Biology I & II (Undergrad Lecture course, ~100 students) Keio University School of Medicine

2008-2024 Molecular Biology (Graduate Program core course, ~80 students) Keio University
2019- 2021 Genome Science (Lecture course, ~40 students)
2015-present Okayama University Dental School Guest Lecture

FUNDING

2025-2031 Grant-in-Aid for Scientific Research: Adopted Research Projects under Specially Promoted Research "Understanding of embryonic development by fathoming multi-copy genetic elements" (No. 25H00008)
2019-2024 MEXT Grant-in-Aid for Scientific Research on Innovative Areas "Program for Totipotency"
2017-2022 Japan Agency for Medical Research and Development (AMED), Project for Elucidating and Controlling Mechanisms of Aging and Longevity
2013-2018 JSPS Grant-in-Aid for Scientific Research (S) "Molecular pathways leading to epigenome formation in mammalian germ cells (No. 25221003)"
2008-2013 JSPS Grant-in-Aid for Scientific Research (S) "Fathoming the evolution of gene regulation through an 'arms race' between transposons and Argonautes (No. 20221008)"
2004-2008 MEXT Genome Network Project "Characterization of non-coding RNA-mediated regulation of gene expression"
2003-2006 JSPS Grant-in-Aid for Scientific Research (A) "Understanding of gene networks that control behaviors through characterizing the hereditary mental retardation gene FMR1"
2001-2006 JSPS Grant-in-Aid for Scientific Research on Priority Areas: Spatiotemporal Network of RNA Information Flow, "Understanding of regulatory mechanisms mediated by RNA-binding proteins"

REVIEW ACTIVITIES

Journals:
Cell, Nature, Science, Genes & Development, Nature Cell Biology, PLoS Biology, eLife, Molecular Cell, Developmental Cell, Development, PLoS Genetics, Nature Structural & Molecular Biology, Current Biology, Nature Review Molecular Cell Biology, Nature Review Genetics, Nature Genetics, Nature Biotechnology, Nature Chemical Biology, Nature Communications, Nature Protocols, RNA, PNAS, EMBO J, EMBO Reports, Cell Reports, PLoS Computational Biology, PLoS Neglected Tropical Diseases, Trends in Biochemical Sciences, Trends in Genetics, Trends in Immunology, Nucleic Acids Research, Genome Research, Genetics, Journal of Biological Chemistry, Mobile DNA, Cancer Research, Biochemical Society Transactions, Genome Biology, Developmental Biology, Journal of Theoretical Biology, etc.

Grants:
The Austrian Genome Research Programme GEN-AU
The Japan Society for the Promotion of Science (Japan)
MEXT, NIH (USA)

Wellcome Trust
The Fund for Scientific Research – Flanders (Belgium)(FWO)
Austrian Science Fund (The START Programme)
National Science Foundation (USA)
Academic Summit Program/National Science Council (Republic of China),
The Division for Chemical Sciences (CW) of the Netherlands
Organisation for Scientific Research (NWO)
Association for International Cancer Research (AICR)
University of Antwerp (Belgium)
Swiss National Science Foundation
Netherlands Organisation for Scientific Research, Earth and Life Sciences (NWO)
The French National Research Agency (ANR)
European Commission (erc)/European Research Council
(ERC CoG; ERC AdG)
Executive Agency (ERCEA)
NWO (Chemical Sciences)
HFSP Career Development Award program
The 2019 Research Grant awards from the HFSP
National Science Centre (Narodowe Centrum Nauki-NCN), Poland
The John Templeton Foundation
The Deutsche Forschungsgemeinschaft (German Research Foundation, DFG) Life Sciences 1: Molecular and Organismic Biology
The Austrian Science Fund (FWF), Stand-alone Projects
The Vienna Science and Technology Fund (WWTF) Life Science Programme
Czech Science Foundation/GACR/Department of Medical and Biological Sciences
ERC Advanced Grant
Swiss National Science Foundation

EXTERNAL SERVICE

-Committee of Fellowship of the Japan Society for the Promotion of Science for Japanese (JSPS) Junior Scientists, 2003-2005
-Adviser of JST PRESTO on 'RNA and its biofunctions,' 2006-2012
-Committee of Japan Science and Technology Agency (JST) biology division, 2008-2012
-Advisory committee of JBiC on 'Functional RNA' project, 2009-2010
-Advisory Board of National Institute for Basic Biology, 2009-2013
-Advisor of MEXT Grant-in-Aid for Scientific Research on Innovative Areas ('RNA program'), 2008-2012
-Advisor of MEXT Grant-in-Aid for Scientific Research on Innovative Areas ('Genome adaptation'), 2010-2014
-Advisor of MEXT Grant-in-Aid for Scientific Research on Innovative Areas ('Transcription cycle'), 2012-2016
-Member of the 2014 Japan Prize Selection Committee for the Life Science field, 2013-2014
-Scientific advisory committee for Ministry of Education, Culture, Sports, Science and Technology-Japan, 2012-2016
-Advisor of MEXT Grant-in-Aid for Scientific Research on Innovative Areas ('Chromosome orchestration system'), 2012-2016

-Program Officer of the Research Center for Science Systems, JSPS, 2016~2020
-Riken Associate Chief Scientist Research Review committee, chair, 2016
-Member of the Director-general selection committee for National Institute for Basic Biology, NINS, 2016-2017
-Director of JST CREST/PRESTO on 'Large-scale genome synthesis and cell programming', 2018-2026

EDITORIAL BOARDS (current)

-*RNA,* Editorial Board, 2018~
-*Mobile DNA,* Editorial Board, 2014~
-*Nucleic Acids Research*, Editorial Board, 2010~
-*Genes to Cells*, Associated Editor, 2009~

Ad hoc EXTERNAL REVIEWER

-IBM Thomas J Watson Research Center, NY, 2010
-IMBA, Vienna, 2010
-Thomas Jefferson University, Philadelphia, 2011
-Kazusa DNA Research Institute, 2012~2014
-Osaka University, 2013
-Sloan-Kettering Institute, New York, 2013
-Tokyo Medical and Dental University, 2013
-Institute for Virus Research, Kyoto University, 2013
-City University of Hong Kong, 2015
-University of Minnesota, Minneapolis, MN, 2017
-Riken, 2016, 2017, 2018
-Institute of Biochemistry and Cell Biology, Chinese Academy of Sciences (SIBCB, CAS), Shanghai, 2017
-Johns Hopkins University School of Medicine, Baltimore, 2018
-NIH/NIAMS, Bethesda, 2018
-Department of Agricultural Biotechnology, Seoul National University, 2018
-The Neurobiology, Biochemistry and Biophysics School, Tel-Aviv University, Israel, 2019
-Division of Biological Sciences, Indian Institute of Science, Bangalore, India, 2019
-City University of Hong Kong, 2021
-RIKEN IMS, 2024

STUDENTS/POSTDOCTORAL FELLOWS

Thesis mentor to 17 PhD students
Research mentor to 18 post-doctoral fellows.

BIBLIOGRAPHY

PUBLICATIONS

(PubMed: https://pubmed.ncbi.nlm.nih.gov/?term=Siomi+H&sort=date)
Selected:

Matsunami, N., **Siomi, H**., Hatanaka, M., Yaoita, Y. and Honjo, T. 1986. Preferential transcription of HTLV-I LTR in cell-free extracts of human T cells producing HTLV-I viral proteins. ***Nucleic Acids Res.*** **14**: 4779-4786.
Siomi, H., Shida, H., Nam, S-H., Nosaka, T.,Maki, M. and Hatanaka, M. 1988. Sequence requirements for nucleolar localization of human T cell leukemia virus type I pX protein, which regulates viral RNA processing. ***Cell*** **55**: 197-209.
Siomi, H., Matunis, M. J., Micheal, W. M. and Dreyfuss, G. 1993. The pre-mRNA binding K protein contains an evolutionarily conserved motif. ***Nucleic Acids Res.*** **21**: 1193-1198.
Siomi, H., Siomi, M. C., Nussbaum, R. L. and Dreyfuss, G. 1993. The protein product of the fragile X gene, FMR1, has characteristics of an RNA-binding protein. ***Cell*** **74**: 291-298.
Siomi, H., Choi, M., Siomi, M. C. Nussbaum, R. L. and Dreyfuss, G. 1994. Essential role for KH domains in RNA binding: impaired RNA binding by a mutation in the KH domain of FMR-1 that causes fragile X syndrome. ***Cell*** **76**: 33-39.
Siomi, H. and Dreyfuss, G. 1995. A nuclear localization domain in the hnRNP A1 protein. ***J. Cell Biol.*** **129**: 551-560.
Siomi, M. C., **Siomi, H**., Sauer, W. H., Srinivasan, S., Nussbaum, R. L. and Dreyfuss, G. 1995. FXR1, an autosomal homologue of the fragile X mental retardation gene. ***EMBO J.*** **14**: 2401-2408.
Tabara, H., Yigit, E., **Siomi, H**. and Mello, CC. 2002. The double-stranded RNA binding protein RDE-4 interacts in vivo with RDE-1, DCR-1 and a conserved DExH-box helicase to direct RNA interference in *C. elegans*. ***Cell*** **109**:861-871.
Inoue, SB., Shimoda, M., Nishinokubi, I., Siomi, MC., Okamura, M., Nakamura, A., Kobayashi, S., Ishida, N. and **Siomi, H**. 2002. A role for the Drosophila fragile X related gene in the circadian output. ***Current Biology*** **12**: 1331-1335.
Ishizuka, A., Siomi, MC. and **Siomi, H**. 2002. A Drosophila fragile X protein interacts with components of RNAi and ribosomal proteins. ***Genes & Development*** **16**: 2497-2508.
Okamura, K., Ishizuka, A., **Siomi, H**., and Siomi, MC. 2004. Distinct roles for Argonaute proteins in small RNA-directed RNA cleavage pathways. ***Genes & Development*** **18**: 1655-1666.
Saito, K., Ishizuka, A., **Siomi, H**., and Siomi, MC. 2005. Processing of pre-microRNAs by the Dicer-1-Loquacious complex in *Drosophila* cells. ***PLoS Biology*** 3(7): e235.
Miyoshi, K., Tsukumo, H., Nagami, T., **Siomi, H**., and Siomi, MC. 2005 Slicer function of Drosophila Argonautes and its involvement in RISC formation. ***Genes & Development*** **19**: 2837-2848.
Saito, K., Nishida, KM., Mori, T., Kawamura, Y., Miyoshi, K., Nagami, T., **Siomi, H**., and Siomi, MC. 2006. Specific association of Piwi with rasiRNAs derived from retrotransposon and heterochromatic regions in the Drosophila genome. ***Genes & Development*** **20**: 2214-2222.
Gunawardane, LS., Saito, K., Nishida, KM., Miyoshi, K., Kawamura, Y., Nagami, T., **Siomi, H**., and Siomi, MC. 2007. A Slicer-mediated mechanism for rasiRNA 5'end formation in *Drosophila*. ***Science*** **315**: 1587-1590.

Saito, K., Sakaguchi, Y., Suzuki, T., Suzuki, T., **Siomi, H**., and Siomi, MC. 2007. Pimet, the *Drosophila* homolog of HEN1, mediates 2'-O-methylation of Piwi-interacting RNAs at their 3' ends. ***Genes & Development*** **21**: 1603-1608.

Azuma-Mukai, A., Oguri, H., Kin, T., Qian, ZR., Asai, K., **Siomi, H**., and Siomi, MC. 2008. Characterization of endogenous human Argonautes and their miRNA partners in RNA silencing. ***Proc. Natl. Acad. Sci. USA.*** **105**:7964-7969.

Kawamura, Y., Saito, K., Kin, T., Ono, Y., Asai, K., Sunohara, T., Okada, NT., Siomi MC. and **Siomi, H**. 2008. *Drosophila* endogenous small RNAs bind to Argonaute2 in somatic cells. ***Nature*** **453:** 793-797.

Saito, K., Inagaki, S., Mituyama, T., Kawamura, Y., Ono, Y., Sakota, E., Kotani, H., Asai, K., **Siomi H**. and Siomi, MC. 2009. A regulatory circuit for *piwi* by *traffic jam*, a large Maf, in *Drosophila* gonadal somas. ***Nature*** **461**: 1296-1299.

Nishida, KM., Okada, TN., Kawamura, T., Mituyama, T., Kawamura, Y., Inagaki, S., Huang, H., Chen, D., Kodama, T., **Siomi, H**., and Siomi, MC. 2009. Functional involvement of Tudor and dPRMT5 in the piRNA processing pathway in *Drosophila* germlines. ***EMBO J.*** **28**: 3820-3831.

Miyoshi, T., Takeuchi, A., **Siomi, H.** and Siomi, M.C. 2010. A direct role of Hsp90 in pre-RISC formation in Drosophila. ***Nature Structural and Molecular Biology*** **17**: 1024-1026.

Nagao, A., Mituyama, T., Huang, H., Chen, D., Siomi, MC., **Siomi, H**. 2010. Biogenesis pathways of piRNAs loaded onto AGO3 in the *Drosophila*. ***RNA*** **16**: 2503-2515.

Saito, K., Ishizu, H., Komai, M., Kotani, H., Kawamura, Y., Nishida, KM., **Siomi, H**., and Siomi, MC. 2010. Roles for the Yb body components Armitage and Yb in primary piRNA biogenesis in *Drosophila*. ***Genes & Development*** **24**: 2493-2498.

Cernilogar, F.M., Onorati, M.C., Kothe, G.O., Burroughs, A.M., Parsi, K.M., Breiling, A., lo Sardo, F., Saxena, A., Miyoshi, K., **Siomi, H**., Siomi, M.C., Carninci, P., Gilmour, D.S., Corona, D.F.V., and Orlando, V. 2011. Chromatin-associated RNAi components contribute to transcriptional regulation in *Drosophila.* ***Nature*** **480**: 391-395.

Sato, K., Nishida, K.M., Shibuya, A., Siomi, M.C., and **Siomi, H**. 2011. Maelstrom coordinates microtubule organization during Drosophila oogenesis through interaction with components of the MTOC. ***Genes & Development*** **25**: 2361-2373.

Nishimasu, H., Ishizu, H., Saito, K., Fukuhara, S., Kamatani, MK., Matsumoto, N., Nishizawa, T., Bonnefond, L., Nakanaga, K., Aoki, J., Ishitani, R., **Siomi, H**., Siomi, MC., and Nureki, O. 2012. Structure and function of Zucchini endoribonuclease in piRNA biogenesis. ***Nature*** **491**: 284-287.

Nishida, KM., Miyoshi, K., Ogino, A., Miyoshi, T., **Siomi, H**. and Siomi, MC. 2013. Roles of R2D2, a cytoplasmic D2 body component, in the endogenous siRNA pathway in *Drosophila*. ***Molecular Cell*** **49**: 680-691.

Ohtani, H., Iwasaki, YW., Shibuya, A., **Siomi, H**., Siomi, MC., and Saito, K. 2013. DmGTSF1 is necessary for Piwi–piRISC-mediated transcriptional transposon silencing in the Drosophila ovary. ***Genes & Development*** **27**: 1693-1705.

Hirano, T., Iwasaki, YW., Lin, ZYC., Imamura, M., Seki, NM., Sasaki, E., Saito, K., Okano, H., Siomi, MC., and **Siomi, H**. 2014. Small RNA profiling and characterization of piRNA clusters in the adult testes of the common marmoset, a model primate. ***RNA* 20**: 1223-1237.
Sato, K., Iwasaki, YW., Shibuya, A., Carninci, C., Tsuchizawa, Y., Ishizu, H., Siomi. MC., and **Siomi, H**. 2015. Krimper enforces an antisense bias on piRNA pools by binding AGO3 in the *Drosophila* germline. ***Molecular Cell* 59**: 553-563.
Ishizu, H., Iwasaki, Y.W., Hirakata, S., Ozaki, H., Iwasaki, W., **Siomi, H**., and Siomi, M.C. 2015. Somatic primary piRNA biogenesis driven by cis-acting RNA elements and trans-acting Yb. ***Cell Reports* 12**: 426-440.
Shibata, N., Kashima, M., Ishiko, T., Nishimura, O., Rouhana, L., Misaki, K., Yonemura, S., Saito, K., **Siomi, H**., Siomi, MC., and Agata, K. 2016. Inheritance of a nuclear PIWI from pluripotent stem cells by somatic descendants ensures differentiation by silencing transposons in planarian. ***Dev Cell* 37**: 226-237.
Iwasaki, YW., Murano, K., Ishizu, H., Shibuya, A., Iyoda, Y., Siomi, MC., **Siomi, H**., and Saito, K. 2016. Piwi modulates chromatin accessibility by regulating multiple factors including histone H1 to repress transposons. ***Mol Cell* 63**: 408-419.
Sumiyoshi, T., Sato, K., Yamamoto, H., Iwasaki, YW., **Siomi, H**., and Siomi, MC. 2016. Loss of l(3)mbt leads to acquisition of the ping-pong cycle in *Drosophila* ovarian somatic cells. ***Genes & Development* 30**: 1617-1622.
Matsumoto, N., Nishimasu, H., Sakakibara, K., Nishida, KM., Hirano, T., Ishitani, R., **Siomi, H**., Siomi, MC., and Nureki, O. 2016. Crystal structure of silkworm PIWI-clade Argonaute Siwi bound to piRNA. ***Cell* 167**: 484-497.
Nishida, KM., Sakakibara, K., Iwasaki, YW., Yamada, H., Murakami, R., Murota, Y., Kawamura, T., Kodama, T., **Siomi, H**., and Siomi, MC. 2018. Hierarchical roles of mitochondrial PAPI and Zucchini in Bombyx germline piRNA biogenesis. ***Nature* 555**: 260-264.
Murano, K., Iwasaki, Y.W., Ishizu, H., Mashiko, A., Shibuya, A., Kondo, S., Adachi, S., Suzuki, S., Saito, K., Natsume, T., Siomi, M.C., and **Siomi, H**. 2019. Nuclear RNA export factor variant initiates Piwi–piRNA-guided co-transcriptional silencing. ***EMBO J*. 38**: e102870.
Yamanaka, S., Nishihara, H., Toh, H., Nagai, LAE., Hashimoto, K., Park, S-J., Shibuya, A., Suzuki, AM., Tanaka, Y., Nakai, K., Carninci, P., Sasaki, H., and **Siomi, H**. 2019. Broad heterochromatic domains open in gonocyte development prior to *de novo* DNA methylation. ***Developmental Cell* 51**: 21-34.
Onishi, R., Sato, K., Murano, K., **Siomi, H**., and Siomi, MC. 2020. Piwi suppresses transcription of Brahma-dependent transposons via Maelstrom in ovarian somatic cells. ***Science Advances*** 6: eaaz7420
Ishino, K., Hasuwa, H., Yoshimura, J., Iwasaki, Y.W., Nishihara, H., Seki, N. M., Hirano, T., Tsuchiya, M., Ishizaki, H., Masuda, H., Kuramoto, T., Saito, K., Sakakibara, Y., Toyoda, A., Itoh, T., Siomi, M.C., Morishita, S., **Siomi, H**. 2021. Hamster PIWI proteins bind to piRNAs with stage-specific size variations during oocyte maturation. ***Nucleic Acids Research***. 49: 2700-2720.

Iwasaki, YW., Sriswasdi, S., Kinugasa, Y., Adachi, J., Horikoshi, Y., Shibuya, A., Iwasaki, W., Tashiro, S., Tomonaga, T., and **Siomi, H**. 2021. Piwi-piRNA complexes induce spatial changes in nuclear architecture to induce stepwise heterochromatin formation. ***EMBO J*** **40**: e108345.

Hasuwa, H., Iwasaki, Y.W., Kin, A.Y.W., Ishino, K., Masuda, Sasaki, H., **Siomi**. 2021. Production of functional oocytes requires maternally expressed *PIWI* genes and piRNAs in golden hamsters. ***Nature Cell Biology*** **23:** 1002-1012.

Li, TD., Murano, K., Kitano, T., Guo, Y., Negishi, L. and **Siomi, H**. 2022. TDP-43 safeguards embryo genome from L1 retrotransposition. ***Science Advances*** **8,** eabq3806.

Takeuchi, C., Yokoshi, M., Kondo, S., Shibuya, A., Saito, K., Fukaya, T., **Siomi, H**., and Iwasaki, Y. 2022. Mod(mdg4) variants repress telomeric retrotransposon HeT-A by blocking subtelomeric enhancers. ***Nucleic Acids Research*** **50**, 11550-11579.

Sakashita, A., KitanoT., Ishizu, H., Guo, Y., Masuda, H., Ariura, M., Murano, K. and **Siomi,H.** 2023. Transcription of murine endogenous retrovirus MERVL is required for progression of development in early preimplantation embryos. ***Nature Genetics*** **55**, 484-495.

Guo, Y., Kitano, T., Inoue, K., Murano, K.,Hirose, M., Li, TD. Sakashita, A., Ishizu, H., Ogonuki, N., Matoba, S., Sato, M. Ogura, A. and **Siomi, H**. 2024. *Obox4* promotes zygotic genome activation upon loss of *Dux*. ***eLife*** **13**: e95856.

Ariura, M., Solberg, T., Ishizu, H., Takahashi, H., Carninci, P., **Siomi, H**. and Iwasaki, YW. 2024. *Drosophila* Piwi distinguishes transposons from mRNAs by piRNA complementarity and abundance. ***Cell Reports*** **43**: 115020

REVIEWS, NEWS & VIEWS, and BOOK CHAPTERS

Selected:

Siomi, H. and Dreyfuss, G. 1997. RNA-binding proteins as regulators of gene expression. ***Curr. Opin. Genet. Dev.*** **7**:345-353.

Siomi, H., Ishizuka, A and Siomi, MC. 2004. RNA Interference: A New Mechanism by Which FMRP Acts in the Normal Brain? - What can *Drosophila* teach us? – ***MRDDR review***, **10**: 68-74.

Siomi, H. and Siomi, MC. 2007. Expanding RNA physiology: microRNAs in a unicellular organism. ***Genes & Development*** **21**: 1153-1156.

Siomi, H., and Siomi, MC. 2009. On the road to reading the RNA interference code. ***Nature*** **457**: 396-404.

Siomi, H., and Siomi, MC. 2009. RISC hitches onto endosome trafficking. ***Nature Cell Biology*** **11**: 1049-1051.

Siomi, M.C., Mannen, T., and **Siomi, H**. 2010. How does the royal family of Tudor rule the Piwi-interacting RNA pathway? ***Genes & Development*** **24**: 636-646.

Siomi, H., and Siomi, MC. 2010. Posttranscriptional regulation of miRNA biogenesis in animals. ***Molecular Cell*** **38**: 323-332.

Miyoshi, K., Miyoshi, T., and **Siomi, H**. 2010. Many ways to generate microRNA-like small RNAs: noncanonical pathways for microRNA production. ***Molecular Genetics and Genomics*** **284**: 95-103.

Siomi, H., and Siomi, MC. 2011. Preview: Stress signaling etches heritable marks on chromatin. ***Cell*** **145**: 1005-1007.

Ishizu, H., **Siomi, H.**, and Siomi, MC. 2012. Biology of PIWI-interacting RNAs: new insights into biogenesis and function inside and outside of germlines. ***Genes & Development*** **26**: 2361-2373.
Siomi, H. 2014. It's time to exploit your favorite quirky organism with new technologies. ***EMBO Rep*** **15**: 620-621.
Yamanaka, S., Siomi, MC. and **Siomi, H**. 2014. piRNA clusters and open chromatin structure. ***Mobile DNA*** **5**:22 .
Iwasaki, YW and **Siomi, H**. 2014. miRNA regulatory ecosystem in early embryogenesis. ***Molecular Cell*** **56**: 615-616.
Iwasaki, YW, Siomi, MC and **Siomi, H**. 2015. PIWI-interagting RNA: Its Biogenesis and Functions. ***Annu Rev Biochem.*** **84**:405-433.
Hirano, T., and **Siomi, H**. 2015. Small RNA-directed chromatin modification: Transgenic systems producing artificial piRNAs in germ cells. ***Curr Biol.*** **25**: R280-R283.
Siomi, H., and Siomi, MC. 2015. Phased piRNAs tackle transposons. ***Science*** **348**: 756-757.
Yamanaka, S., and **Siomi, H**. 2015. Misprocessed tRNA response targets piRNA clusters. ***EMBO J***. **34**: 2988-2989.
Hasuwa, H., and **Siomi, H**. 2017. Mobile elements control stem cell potency. ***Science*** **355**: 581-582.
Murano, K., Gu, Y., and **Siomi, H**. 2021. The emergence of SARS-CoV-2 variants threatens to decrease the efficacy of neutralizing antibodies and vaccines. ***Biochemical Society Transactions*** **49**, 2879-2890.
Sakashita, A., and **Siomi H**. 2023. Research briefing: Mouse embryonic development requires transposable element expression. ***Nature Genetics*** **55**, 367-368.
Guo, Y., Li, TD., Modzelewski, AJ., and **Siomi H**. 2024. Retrotransposon renaissance in early embryos. ***Trends in Genetics*** **40**, 39-51. https://doi.org/10.1016/j.tig.2023.10.010
Solberg, T., Kobayashi-Ishihara, M., and **Siomi H**. 2024. The impact of retrotransposons on the chromatin landscape of early embryos. ***Annals of the New York Academy of Sciences*** **1542**, 11-24.

DEPERTMENT SEMINARS and SYMPOSIUM TALKS
Selected:
Columbia University College of Physicians & Surgeons, Department of Genetics and Development, New York, NY, March 1996.
New York University Medical Center, Department of Biochemistry, New York, NY, December 1996.
University of Pennsylvania, Department of Biochemistry and Biophysics, Philadelphia, PA, February 1997.
University of British Columbia, Centre for Molecular Medicine and Therapeutics, Vancouver, Canada, September 1997
Speaker as a member of the faculty at the Sixth International Fragile X Conference, Asheville, North Carolina, July 1998
University of Connecticut Health Center, Farmington, Connecticut, November 1998
University of Tokyo, Department of Chemistry and Biotechnology, Graduate School of Engineering, Tokyo, Japan, December 1998
Tokyo Medical and Dental University Human Gene Sciences Center, Tokyo, Japan, December 1998

Kanazawa University Cancer Research Institute, Kanazawa, Japan, December 1998
RIKEN Brain Science Institute, Wako, Saitama, Japan, February 1999
Max-Plank Institute for Biochemistry, Munich, Germany, July 1999
Ringberg Meeting on RNA-Metabolism and Neurological Diseases, Ringberg Castle, Bavaria, Germany, May 2000
Understanding The Neural Basis of Fragile X Meeting, Banbury Center, Cold Spring Harbor Laboratory, Cold Spring Harbor, New York, March 2001
10th International Workshop on Fragile X and X-linked mental retardation, Villa Tuscolana, Frascati, Italy, September 2001
Speaker at the 8th International Fragile X Conference, Chicago, July 2002.
Speaker at the 9th International Fragile X Conference, Washington DC, June 2004.
The Eighth US-Japan Cellular and Gene Therapy Conference on RNA Therapy, Natcher Conference Center, NIH, Bethesda, Maryland, February 2005.
CDB Symposium 2006 –Logic of Development: New Strategies and Concepts, Kobe, Japan, April 2006.
CAS International Symposium on Model Organisms and Diseases, Beijing, October 2006
Institute of Genetics and Developmental Biology, Chinese Academy of Sciences, Beijing, China, January 2008
The 65th KSBMB annual meeting, KSMBMB-KSBMB joint symposium on RNA Biology, Seoul, Korea, May 2008
RiboClub 2008 Opening Session Program, 'Tiny RNAs-big players in the RNA world', Sherbrooke, Quebec, Canada, September 2008
Institute of Biomedical Sciences, Academia Sinica, Taipei, Taiwan, October 2008
20th FAOBMB Taipei Conference 'Frontier in Life Sciences', Symposium "RNA biology and Gene regulation" (moderator: Woan-Yuh Tarn & Haruhiko Siomi), Yang-Ming University, Taiwan, October 2008
National Institute of Biological Sciences, Beijing, China, December 2008
The 4th International Workshop on Cell Regulations in Division and Arrest, OIST, Okinawa, Japan, December 2009
Genetics Seminar Program, Yale University School of Medicine, New Haven, January 12, 2010
Plenary Lecture, RNA Symposium 2010 (the 3rd RNA molecular Biology meeting of Taiwan), National Cheng Kung University, Tainan, Taiwan February 8-9, 2010
"Bingzhi Forum" speaker at Institute of Zoology, Chinese Academy of Sciences, Beijing, China, June 15, 2010
International symposium on Control of Gene Expression and Cancer, dedicated to the 20th anniversary of the Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia, June 21-25, 2010
International Centre for genetic engineering and biotechnology (ICGEB)-European Science Foundation (ESF) Workshop on RNA processing in biology and medicine, Beijing, China, October 20-22, 2010
The New York Academy of Sciences, "Piwi-interacting RNAs (piRNAs), the guardians of the germ-line stem cell genome –Biogenesis and Function-, New York, November 3, 2010

Memorial Sloan-Kettering Cancer Institute, New York, November 4, 2010
CGC/CBG meeting Epigenetics and non-coding RNAs, Koninklijk Instituut voor de Tropen, Amsterdam, November 10, 11, 2011
The 3rd Shanghai International Conference of Epigenetics in Development and Diseases/The 7th Annual Conference of Asian Epigenome Alliance/Genome Medicine Workshop on Epigenetic (-moic)s in Diseases, Shanghai, China, April 19-22, 2012
63rd Fujihara Seminar, "A new horizon of retroposon research", Kyoto, July 31 – August 3, 2012
Radiation Effects research Foundation, International Workshop: RERF Radiation Research in the Post-genome Era, Hiroshima, March 7-8, 2013
HMG2013 & 21st ICG Singapore: Noncoding RNAs & miRNAs, Singapore April 13, 2013
Institute of Molecular Genetics, Moscow, Russia, September 2, 2013
Institute of Genetics and Developmental Biology, Chinese Academy of Sciences, Beijing, China, September 10, 213
Keystone Symposia "RNA Silencing", Seattle, USA, January 31 – February 5, 2014
Opening lecture, Current Methods in RNP Analysis (Graduate research course), University of Regensburg, Germany, July 21-25, 2014
The Russia-Japan joint meeting on small RNAs and germline development, Saint Petersburg University, Saint Petersburg, Russia, August 5, 2014
Symposium on RNA Biology, ComBio2014, Canberra, Australia, October 2, 2014
Institute of Biochemistry and Cell Biology, Shanghai Institutes of Biological Sciences, Chinese Academy of Sciences, Shanghai, China, November 10, 2014
RNA Biology, CSH-Asia conference, Suzhou, China, November 11, 2014
Keynote lecture, The World of Regulatory RNAs, Tel Aviv University, Tel Aviv, Israel, May 7, 2015
College of Agriculture and Life Sciences, Seoul National University, Seoul, Korea, June 24, 2015
The keynote lecture, The 4th annual meeting of the RNA Society of Taiwan, National Cheng Kung University, Tainan, Taiwan, September 26-27, 2016
The keynote lecture, Mini-Symposium on ncRNA, Academia Sinica, Taipei, Taiwan, September 29, 2016
NUS-KEIO joint scientific symposium "Frontiers if translational medicine – From cradle to aging", National University of Singapore, Singapore, January 10-11, 2017
Institute of Zoology, CAS, Beijing, China, February 2, 2017
Japan-Russia Symposium on piRNA Silencing, Institute of Molecular Genetics, RAS, Moscow, Russia, March 13-14, 2017
TEMASEK lifesciences laboratory, Singapore, December 13, 2017
Cancer Science Institute of Singapore, National University of Singapore, Singapore, December 14, 2017
Japanese-Russian symposium on piRNA silencing and heterochromatin, Institute of Molecular Genetics, Moscow, March 13-14, 2018
Rockefeller University, New York, May 22, 2018
Cincinnati Children's Hospital Medical Center, May 24, 2018
piRNAs and PIWI proteins, EMBO Workshop, Montpellier, France, September 12 – 15, 2018

Cell Biology, Developmental Biology, and Systems Biology Course Meeting, Kyoto University School of Medicine, September 21, 2018
Japanese-Russian Symposium on piRNA Silencing, Institute of molecular genetics, RAS, October 29-30, 2018
2018 IBS Conference on RNA Biology Seoul National University, Seoul, Korea, November 5-7, 2018
40th Annual Lorne Genome Conference, Lorne, Australia, February 17-19, 2019
Institute of Biochemistry and Cell Biology, Shanghai Institutes of Biological Sciences, Chinese Academy of Sciences, Shanghai, China, May 16, 2019
School of Life Science and Technology, ShanghaiTech University, Shanghai, China, May 17, 2019
NIG Meeting on chromosome, chromatin and nuclear dynamics, National Institute of Genetics, Mishima, June 5-6, 2019
Institute of Molecular Embryology and Genetics, Kumamoto University, Kumamoto, December 18, 2019
Cold Spring Harbor Laboratory meeting on Regulatory & Non-coding RNAs, Cold Spring Harbor, NY, May 12 – 15, 2020 (the virtual Zoom meeting due to the SARS-Cov-2 pandemic).
The BBSRC-JST UK-Japan Virtual Workshop in Synthetic Biology, October 23, 2020 (Speaker, moderator and session chair: the virtual Zoom meeting due to the SARS-Cov-2 pandemic).
EMBO piRNA Workshop 2022 on PIWI proteins and piRNAs. April 6-9, 2022 (the virtual Zoom meeting due to the SARS-Cov-2 pandemic).
Cell Research Symposia on Molecular Science-Non-coding and Regulatory RNA, April 10-11, 2022 (one of the organizers: the virtual Zoom meeting due to the SARS-Cov-2 pandemic).
Small Regulatory RNAs: from biogenesis to function. Montpellier, France, March 9, 2023
Keystone meeting, “Transposable elements at the crossroads of evolution, health and disease,” Whistler, British Columbia, Canada, September 3 – 6, 2023
UBC Advanced Genomics and Genome Engineering Workshop, The University of British Columbia, Vancouver, Canada, September 8, 2023
2023 Taiwan-Japan Bilateral Meeting on RNA and Biofunctions, National Taiwan University, October 27-29, 2023
RIKEN Center for Integrative Medical Sciences (IMS), Tsurumi/Yokohama, March 19, 2024
UK-Japan international meeting on Synthetic Biology, Imperial College London, London UK, April 22-23, 2024
2024 Fudan International Symposium of RNA Biology: Frontier and Therapeutics, Fudan University, Shanghai, Ch, August 31-September 1, 2024
CSH-Asia, The repetitive and mobile genome, Suzhou/China, April 7-April 11, 2025
Guangzhou Medical Center, Guangzhou/China, April 15, 2025

LECTURES for HIGH SCHOOL, UNDERGRADUATE, or GRADUATE STUDENTS

Hokkaido University, 2000
Kumamoto University, 2002
University of Tokyo, 2003
Nagoya University, 2004
Tokyo Medical and Dental University, 2007
Kyoto University, 2008
University of Tokyo, 2009
Tokyo Institute of Technology, 2009
Nagoya University, 2010
Hokkaido University, 2010
Toyama University, 2010
Special lecture for selected high school students @ Keio, 2010
Toyama University, 2012
Meiwa High School SSH program, 2012
Toyama University, 2014
Kurashiki Amagi High School SSH program, 2019
JST Global Science Campus program, Tokyo, 2023