



Andrew Fire

George D. Smith Professor of Molecular and Genetic Medicine and Professor of Pathology and of Genetics

Bio

ACADEMIC APPOINTMENTS

- Professor, Pathology
- Professor, Genetics
- Member, Bio-X
- Member, Cardiovascular Institute
- Member, Maternal & Child Health Research Institute (MCHRI)
- Member, Stanford Cancer Institute
- Member, Wu Tsai Neurosciences Institute

ADMINISTRATIVE APPOINTMENTS

- Professor of Pathology and Genetics, Stanford University School of Medicine, (2003- present)
- Assistant Professor -> Professor of Biology (Adjunct), Johns Hopkins University, (1989-2009)
- Scientific Staff, Carnegie Institution of Washington, (1989-2003)
- Staff Associate, Carnegie Institution of Washington, (1986-1989)

LINKS

- Fire Lab: <https://firelab.stanford.edu>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

->What We Do:

Our lab studies novel (non-chromosomal) agents of genetic constancy and change and the mechanisms by which organisms and cells respond to such agents.

The genetic landscape faced by a living cell is constantly changing. Developmental transitions, environmental shifts, and pathogenic invasions lend a dynamic character to both the genome and its activity pattern. We study a variety of genetic change agents, as well as the natural mechanisms that are utilized by cells adapting to such agents. The change agents include a panoply of previously (and often still) uncharacterized DNA and RNA elements that straddle boundaries between genome, virome, and mobilome. The corresponding propagation and control mechanisms likewise span a spectrum between systems activated during normal development and systems for detecting and responding to foreign or unwanted genetic activity. At the root of

these studies are searches for unexpected genetic and genomic entities and questions of how a cell can distinguish "self" versus "nonself" and "wanted" versus "unwanted" gene activity.

We make use of both model and non-model organisms in our work. The "simple" nematode *C. elegans* is a recurring tool in our experimental studies. *C. elegans* is small, easily cultured, and can readily be made to accept foreign DNA or RNA. The results of such experiments have outlined a number of concerted responses that recognize (and in most cases work to silence) the foreign nucleic acid. One such mechanism ("RNAi") responds to double stranded character in RNA: either as introduced experimentally into the organism or as produced from foreign DNA that has not undergone selection to avoid a dsRNA response. RNAi is not the only cellular defense against unwanted nucleic acid, and substantial current effort in the lab is also directed at identification of other triggers and mechanisms used in recognition and response to foreign information. Beyond *C. elegans*, we seek novel processes driving genetic constancy and change the lie outside of standard chromosomal inheritance. The latter studies have taken us to a number of studies with non-model organisms and toward a view that biology is best expanded by combining model organism approaches with a wide net for novel phenomena that includes examining wide diversity of non-model organisms.

----->Who we are:

PI: Andrew Fire, Professor of Pathology and Genetics, Stanford University School of Medicine

Postdoctoral Fellows:

Dr. Dae-Eun Jeong (Ph.D. Pohang University of Science and Technology, 2017)

Dr. Orkan Ilbay (Ph.D. University of Massachusetts, 2019)

Dr. Matthew McCoy (Ph.D. Washington University, 2018)

Graduate Students:

Usman Enam [Stanford Genetics Ph.D. Program] (B.S. Johns Hopkins, 2020)

Drew Galls [Stanford Genetics Ph.D. Program] (B.S. Yale, 2021)

Janie Kim [Stanford Biology Ph.D. Program; Joint with Nicole Martinez Lab] (A.B. Princeton 2021)

Colette Benko [Stanford Developmental Biology, Ph.D. Program] (BMSc Biochemistry, WesternU 2022)

Undergraduate Students:

Talha Rao [Stanford '2026]

Visiting Scientist:

David Lipman (FDA CFSAN)

Laboratory Manager:

Karen Artilles (Ph.D. UC Santa Cruz, 2008)

Laboratory Specialist:

Krisztina Perez

-> Joining The Fire Lab

We welcome new applicants to the lab.

Prospective postdoctoral applicants should send a resume and summary of research to Dr. Fire (afire <at> stanford <dot> edu), and arrange to have 3-4 letters of reference likewise sent to this address.

Prospective graduate students are encouraged to apply to the Stanford Genetics Ph.D. program (or to any of the biosciences Ph.D. programs): <http://biosciences.stanford.edu/prospective/>

Rotation Students: We welcome rotation students from any program at Stanford, with Spring being the preferred quarter. Email the PI.

We occasionally have undergraduate research opportunities. Email the PI at the above address.

Teaching

COURSES

2025-26

- Advanced Genetics: GENE 205 (Win)
- Genetics and Developmental Biology Training Camp: DBIO 200, GENE 200 (Aut)
- Genetics of Viral Emergence and Emerging Viruses: GENE 242 (Win)

2024-25

- Advanced Genetics: GENE 205 (Win)
- Genetics and Developmental Biology Training Camp: DBIO 200, GENE 200 (Aut)
- Genetics of Viral Emergence and Emerging Viruses: GENE 242 (Win)

2023-24

- Advanced Genetics: GENE 205 (Win)
- Computational Analysis of Biological Information: Introduction to Python for Biologists: GENE 218, MI 218, PATH 218 (Sum)
- Genetics and Developmental Biology Training Camp: DBIO 200, GENE 200 (Aut)
- Genetics of Viral Emergence and Emerging Viruses: GENE 242 (Win)

2022-23

- Advanced Genetics: GENE 205 (Win)
- Computational Analysis of Biological Information: Introduction to Python for Biologists: GENE 218, MI 218, PATH 218 (Sum)
- Genetics and Developmental Biology Training Camp: DBIO 200, GENE 200 (Aut)
- Genetics of Viral Emergence and Emerging Viruses: GENE 242 (Win)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Simone Evans, Matthew Gill, Gokul Kannan, Yannick Lee-Yow, Rahul Nagvekar, Gabriel Tauber, Tee Udomlumleart, Sidney Vermeulen

Doctoral Dissertation Advisor (AC)

Colette Benko, Usman Enam, Drew Galls, Haim Krupkin

Doctoral Dissertation Co-Advisor (AC)

Janie Kim

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Cancer Biology (Phd Program)
- Genetics (Phd Program)
- Immunology (Phd Program)

Publications

PUBLICATIONS

- **Case-control study of water and agricultural exposures among women in CKDu-endemic Sri Lanka.** *Journal of water and health*
Contreras Nieves, M., Hewapathirana, S., Zabel, F. Q., Mahalekam, D., Yu, X., Weerakoon, C., Bandara, M., Bandara, I., Maduwantha, I., Hearth, D., Athauda, I., Rathnayake, B., Erandika, et al
2026; 24 (2): 160-175
- **Case-control study of water and agricultural exposures among women in CKDu-endemic Sri Lanka** *JOURNAL OF WATER AND HEALTH*
Contreras Nieves, M., Hewapathirana, S., Zabel, F., Mahalekam, D., Yu, X., Weerakoon, C., Bandara, M., Bandara, I., Maduwantha, I., Hearth, D., Athauda, I., Rathnayake, B., Erandika, et al
2026
- **A default silencing mechanism restrains stress-induced genes in *C. elegans*.** *bioRxiv : the preprint server for biology*
Ilbay, O., Gama, A. R., Jarosz, D. F., Morimoto, R. I., Fire, A.
2025
- **CGC1, a new reference genome for *Caenorhabditis elegans*.** *Genome research*
Ichikawa, K., Shoura, M. J., Artiles, K. L., Jeong, D. E., Owa, C., Kobayashi, H., Suzuki, Y., Kanamori, M., Toyoshima, Y., Iino, Y., Rougvie, A. E., Wahba, L., Fire, et al
2025
- **DragonRNA: Generality of DNA-primed RNA-extension activities by DNA-directed RNA polymerases.** *Nucleic acids research*
Greenwald, E., Galls, D., Park, J., Jain, N., Montgomery, S. B., Roy, B., Yin, Y. W., Fire, A. Z.
2025; 53 (6)
- **A general RNA-templated RNA extension activity of *E. coli* RNA polymerase.** *RNA (New York, N.Y.)*
Galls, D., Mueller, A. U., Greenwald, E., Fire, A.
2025
- **Viroid-like colonists of human microbiomes.** *Cell*
Zheludev, I. N., Edgar, R. C., Lopez-Galiano, M. J., de la Peña, M., Babaian, A., Bhatt, A. S., Fire, A. Z.
2024
- **A genetic and microscopy toolkit for manipulating and monitoring regeneration in *Macrostomum lignano*.** *Cell reports*
Hall, R. N., Li, H., Chai, C., Vermeulen, S., Bigasin, R. R., Song, E. S., Sarkar, S. R., Gibson, J., Prakash, M., Fire, A. Z., Wang, B.
2024; 43 (11): 114892
- **Pachytene piRNAs control discrete meiotic events during spermatogenesis and restrict gene expression in space and time.** *Science advances*
Ortega, J., Wahba, L., Seemann, J., Chen, S., Fire, A. Z., Arur, S.
2024; 10 (40): eadp0466
- **Parallel gene size and isoform expansion of ancient neuronal genes.** *Current biology : CB*
McCoy, M. J., Fire, A. Z.
2024
- **Kidney biopsies among persons living in hotspots of CKDu: A position statement from the International Society of Nephrology's Consortium of Collaborators on CKDu.** *Kidney international*

- Wijewickrama, E., Behera, S., Garcia, P., Avila-Casado, C., Caplin, B., Paolo, V. S., Courville, K., Friedman, D., Madero, M., Jha, V., Kambham, N., Levin, A., Anand, et al
2023
- **DNA polymerase diversity reveals multiple incursions of Polintons during nematode evolution.** *Molecular biology and evolution*
Jeong, D. E., Sundrani, S., Hall, R. N., Krupovic, M., Koonin, E. V., Fire, A. Z.
2023
 - **Describing Natural History and Exploring Risk Factors for Kidney Function Decline in Persons With CKD of Uncertain Etiology in Sri Lanka.** *Kidney international reports*
Hewavitharana, P., Schensul, S., Lee, E., Montez-Rath, M., Senarathne, S., Liu, S., Harold, K., Hewapathirana, S., Erandika, N., Abeysundara, H. T., Yu, X., Bhalla, V., Fire, et al
2023; 8 (7): 1430-1438
 - **Challenges and opportunities in interventions for chronic kidney disease of unknown origin (CKDu): report from the International Society of Nephrology Consortium of Collaborators on CKDu.** *Kidney international*
Smyth, B., Glaser, J., Butler-Dawson, J., Nanayakkara, N., Wegman, D. H., Anand, S., Levin, A., International Society of Nephrology International Consortium of Collaborators on Chronic Kidney Disease of Unknown Etiology (i3C), Caplin, B., Correa Rotter, R., Eckardt, K., Fire, A., Friedman, D., et al
2023; 103 (1): 6-12
 - **Restriction Endonuclease-Based Modification-Dependent Enrichment (REMoDE) of DNA for Metagenomic Sequencing.** *Applied and environmental microbiology*
Enam, S. U., Cherry, J. L., Leonard, S. R., Zheludev, I. N., Lipman, D. J., Fire, A. Z.
2022: e0167022
 - **Heterologous reporter expression in the planarian *Schmidtea mediterranea* through somatic mRNA transfection.** *Cell reports methods*
Hall, R. N., Weill, U., Drees, L., Leal-Ortiz, S., Li, H., Khariton, M., Chai, C., Xue, Y., Rosental, B., Quake, S. R., Sanchez Alvarado, A., Melosh, N. A., Fire, et al
2022; 2 (10): 100298
 - **Context-dependent DNA polymerization effects can masquerade as DNA modification signals.** *BMC genomics*
Takahashi, Y., Shoura, M., Fire, A., Morishita, S.
2022; 23 (1): 249
 - **Lymphoid blast transformation in an MPN with BCR-JAK2 treated with ruxolitinib: putative mechanisms of resistance.** *Blood advances*
Chen, J. A., Hou, Y., Roskin, K. M., Arber, D. A., Bangs, C. D., Baughn, L. B., Cherry, A. M., Ewalt, M. D., Fire, A. Z., Fresard, L., Kearney, H. M., Montgomery, S. B., Ohgami, et al
2021; 5 (17): 3492-3496
 - **An essential role for the piRNA pathway in regulating the ribosomal RNA pool in *C.elegans*.** *Developmental cell*
Wahba, L., Hansen, L., Fire, A. Z.
2021
 - **PLP-1 is essential for germ cell development and germline gene silencing in *C. elegans*.** *Development (Cambridge, England)*
Vishnupriya, R., Thomas, L., Wahba, L., Fire, A., Subramaniam, K.
2020
 - **Doubling of the known set of RNA viruses by metagenomic analysis of an aquatic virome.** *Nature microbiology*
Wolf, Y. I., Silas, S., Wang, Y., Wu, S., Bocek, M., Kazlauskas, D., Krupovic, M., Fire, A., Dolja, V. V., Koonin, E. V.
2020
 - **An Extensive Meta-Metagenomic Search Identifies SARS-CoV-2-Homologous Sequences in Pangolin Lung Viromes.** *mSphere*
Wahba, L., Jain, N., Fire, A. Z., Shoura, M. J., Artiles, K. L., McCoy, M. J., Jeong, D.
2020; 5 (3)
 - **Aberrant B cell repertoire selection associated with HIV neutralizing antibody breadth.** *Nature immunology*
Roskin, K. M., Jackson, K. J., Lee, J., Hoh, R. A., Joshi, S. A., Hwang, K., Bonsignori, M., Pedroza-Pacheco, I., Liao, H., Moody, M. A., Fire, A. Z., Borrow, P., Haynes, et al
2020

- **Transcription polymerase-catalyzed emergence of novel RNA replicons.** *Science (New York, N.Y.)*
Jain, N. n., Blauch, L. R., Szymanski, M. R., Das, R. n., Tang, S. K., Yin, Y. W., Fire, A. Z.
2020
- **Intron and gene size expansion during nervous system evolution.** *BMC genomics*
McCoy, M. J., Fire, A. Z.
2020; 21 (1): 360
- **Deconvolution of nucleic-acid length distributions: a gel electrophoresis analysis tool and applications.** *Nucleic acids research*
Ziraldó, R., Shoura, M. J., Fire, A. Z., Levene, S. D.
2019
- **Ribosome clearance during RNA interference.** *RNA (New York, N.Y.)*
Pule, M. N., Glover, M. L., Fire, A. Z., Arribere, J. A.
2019
- **Maternal Ribosomes Are Sufficient for Tissue Diversification during Embryonic Development in C-elegans** *DEVELOPMENTAL CELL*
Cenik, E., Meng, X., Tang, N., Hall, R., Arribere, J. A., Cenik, C., Jin, Y., Fire, A.
2019; 48 (6): 811+
- **Assessment and Maintenance of Unigametic Germline Inheritance for C. elegans** *DEVELOPMENTAL CELL*
Artiles, K. L., Fire, A. Z., Frokjaer-Jensen, C.
2019; 48 (6): 827+
- **Target-dependent nickase activities of the CRISPR-Cas nucleases Cpf1 and Cas9.** *Nature microbiology*
Fu, B. X., Smith, J. D., Fuchs, R. T., Mabuchi, M., Curcuru, J., Robb, G. B., Fire, A. Z.
2019
- **CLONALITY: POINT ESTIMATION** *ANNALS OF APPLIED STATISTICS*
Tian, L., Liu, Y., Fire, A. Z., Boyd, S. D., Olshen, R. A.
2019; 13 (1): 113–31
- **Assessment and Maintenance of Unigametic Germline Inheritance for C.elegans.** *Developmental cell*
Artiles, K. L., Fire, A. Z., Frokjar-Jensen, C.
2019
- **Maternal Ribosomes Are Sufficient for Tissue Diversification during Embryonic Development in C.elegans.** *Developmental cell*
Cenik, E. S., Meng, X., Tang, N. H., Hall, R. N., Arribere, J. A., Cenik, C., Jin, Y., Fire, A.
2019
- **Prospective Biopsy-Based Study of Chronic Kidney Disease of Unknown Etiology in Sri Lanka.** *Clinical journal of the American Society of Nephrology : CJASN*
Anand, S., Montez-Rath, M. E., Adasooriya, D., Ratnatunga, N., Kambham, N., Wazil, A., Wijetunge, S., Badurdeen, Z., Ratnayake, C., Karunasena, N., Schensul, S. L., Valhos, P., Haider, et al
2019
- **Recompleting the Caenorhabditis elegans genome.** *Genome research*
Yoshimura, J. n., Ichikawa, K. n., Shoura, M. J., Artiles, K. L., Gabdank, I. n., Wahba, L. n., Smith, C. L., Edgley, M. L., Rougvie, A. E., Fire, A. Z., Morishita, S. n., Schwarz, E. M.
2019
- **Epidemiology, molecular, and genetic methodologies to evaluate causes of CKDu around the world: report of the Working Group from the ISN International Consortium of Collaborators on CKDu.** *Kidney international*
Anand, S. n., Caplin, B. n., Gonzalez-Quiroz, M. n., Schensul, S. L., Bhalla, V. n., Parada, X. n., Nanayakkara, N. n., Fire, A. n., Levin, A. n., Friedman, D. J.
2019; 96 (6): 1254–60
- **A Reverse Transcriptase-Cas1 Fusion Protein Contains a Cas6 Domain Required for Both CRISPR RNA Biogenesis and RNA Spacer Acquisition** *MOLECULAR CELL*
Mohr, G., Silas, S., Stamos, J. L., Makarova, K. S., Markham, L. M., Yao, J., Lucas-Elio, P., Sanchez-Amat, A., Fire, A. Z., Koonin, E., Lambowitz, A. M.

2018; 72 (4): 700-+

- **A Reverse Transcriptase-Cas1 Fusion Protein Contains a Cas6 Domain Required for Both CRISPR RNA Biogenesis and RNA Spacer Acquisition.** *Molecular cell*
Mohr, G., Silas, S., Stamos, J. L., Makarova, K. S., Markham, L. M., Yao, J., Lucas-Elio, P., Sanchez-Amat, A., Fire, A. Z., Koonin, E. V., Lambowitz, A. M.
2018
- **A Small RNA Isolation and Sequencing Protocol and Its Application to Assay CRISPR RNA Biogenesis in Bacteria** *BIO-PROTOCOL*
Silas, S., Jain, N., Stadler, M., Fu, B., Sanchez-Amat, A., Fire, A. Z., Arribere, J.
2018; 8 (4)
- **Nonsense mRNA suppression via nonstop decay** *ELIFE*
Arribere, J. A., Fire, A. Z.
2018; 7
- **Intricate and Cell Type-Specific Populations of Endogenous Circular DNA (eccDNA) in *Caenorhabditis elegans* and *Homo sapiens*.** *G3 (Bethesda, Md.)*
Shoura, M. J., Gabdank, I., Hansen, L., Merker, J., Gotlib, J., Levene, S. D., Fire, A. Z.
2017; 7 (10): 3295-3303
- **A novel TRIP11-FLT3 fusion in a patient with a myeloid/lymphoid neoplasm with eosinophilia** *CANCER GENETICS*
Chung, A., Hou, Y., Ohgami, R. S., Von Gehr, A., Fisk, D. G., Roskin, K. M., Li, X., Gojenola, L., Bangs, C. D., Arber, D. A., Fire, A. Z., Cherry, A. M., Zehnder, et al
2017; 216: 10-15
- **Type III CRISPR-Cas systems can provide redundancy to counteract viral escape from type I systems** *ELIFE*
Silas, S., Lucas-Elio, P., Jackson, S. A., Aroca-Crevillen, A., Hansen, L. L., Fineran, P. C., Fire, A. Z., Sanchez-Amat, A.
2017; 6
- **Sequence-Modified Antibiotic Resistance Genes Provide Sustained Plasmid-Mediated Transgene Expression in Mammals** *MOLECULAR THERAPY*
Lu, J., Zhang, F., Fire, A. Z., Kay, M. A.
2017; 25 (5): 1187-1198
- **High-Throughput Characterization of Cascade type I-E CRISPR Guide Efficacy Reveals Unexpected PAM Diversity and Target Sequence Preferences.** *Genetics*
Fu, B. X., Wainberg, M. n., Kundaje, A. n., Fire, A. Z.
2017; 206 (4): 1727-38
- **Intricate and Cell Type-Specific Populations of Endogenous Circular DNA (eccDNA) in *Caenorhabditis elegans* and *Homo sapiens*** *G3: GENES, GENOMES, GENETICS*
Shoura, M., Gabdank, I., Merker, J., Gotlib, J., Levene, S., Fire, A.
2017; 7: 3295-3303
- **On the Origin of Reverse Transcriptase-Using CRISPR-Cas Systems and Their Hyperdiverse, Enigmatic Spacer Repertoires.** *mBio*
Silas, S. n., Makarova, K. S., Shmakov, S. n., Páez-Espino, D. n., Mohr, G. n., Liu, Y. n., Davison, M. n., Roux, S. n., Krishnamurthy, S. R., Fu, B. X., Hansen, L. L., Wang, D. n., Sullivan, et al
2017; 8 (4)
- **An Abundant Class of Non-coding DNA Can Prevent Stochastic Gene Silencing in the *C. elegans* Germline** *CELL*
Frokjaer-Jensen, C., Jain, N., Hansen, L., Davis, M. W., Li, Y., Zhao, D., Rebora, K., Millet, J. R., Liu, X., Kim, S. K., Dupuy, D., Jorgensen, E. M., Fire, et al
2016; 166 (2): 343-357
- **Translation readthrough mitigation** *NATURE*
Arribere, J. A., Cenik, E. S., Jain, N., Hess, G. T., Lee, C. H., Bassik, M. C., Fire, A. Z.
2016; 534 (7609): 719-?
- **Distinct patterns of Cas9 mismatch tolerance in vitro and in vivo** *NUCLEIC ACIDS RESEARCH*
Fu, B. X., Onge, R. P., Fire, A. Z., Smith, J. D.

2016; 44 (11): 5365-5377

- **Persistence and evolution of allergen-specific IgE repertoires during subcutaneous specific immunotherapy** *JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY*
Levin, M., King, J. J., Glanville, J., Jackson, K. J., Looney, T. J., Hoh, R. A., Mari, A., Andersson, M., Greiff, L., Fire, A. Z., Boyd, S. D., Ohlin, M.
2016; 137 (5): 1535-1544
- **Maturation Pathway from Germline to Broad HIV-1 Neutralizer of a CD4-Mimic Antibody.** *Cell*
Bonsignori, M., Zhou, T., Sheng, Z., Chen, L., Gao, F., Joyce, M. G., Ozorowski, G., Chuang, G., Schramm, C. A., Wiehe, K., Alam, S. M., Bradley, T., Gladden, et al
2016; 165 (2): 449-463
- **A streamlined tethered chromosome conformation capture protocol** *BMC GENOMICS*
Gabdank, I., Ramakrishnan, S., Villeneuve, A. M., Fire, A. Z.
2016; 17
- **Direct CRISPR spacer acquisition from RNA by a natural reverse transcriptase-Cas1 fusion protein** *SCIENCE*
Silas, S., Mohr, G., Sidote, D. J., Markham, L. M., Sanchez-Amat, A., Bhaya, D., Lambowitz, A. M., Fire, A. Z.
2016; 351 (6276): 932-?
- **Chikungunya Virus Sequences Across the First Epidemic in Nicaragua, 2014-2015.** *American journal of tropical medicine and hygiene*
Wang, C., Saborio, S., Gresh, L., Eswarappa, M., Wu, D., Fire, A., Parameswaran, P., Balmaseda, A., Harris, E.
2016; 94 (2): 400-403
- **Cas9 Variants Expand the Target Repertoire in *Caenorhabditis elegans*.** *Genetics*
Bell, R. T., Fu, B. X., Fire, A. Z.
2016; 202 (2): 381-388
- **Associations between nucleosome phasing, sequence asymmetry, and tissue-specific expression in a set of inbred Medaka species** *BMC GENOMICS*
Nakatani, Y., Mello, C. C., Hashimoto, S., Shimada, A., Nakamura, R., Tsukahara, T., Qu, W., Yoshimura, J., Suzuki, Y., Sugano, S., Takeda, H., Fire, A., Morishita, et al
2015; 16
- **Functional relevance of "seed" and "non-seed" sequences in microRNA-mediated promotion of *C. elegans* developmental progression** *RNA*
Zhang, H., Artiles, K. L., Fire, A. Z.
2015; 21 (11): 1980-1992
- **Landscape of target:guide homology effects on Cas9-mediated cleavage.** *Nucleic acids research*
Fu, B. X., Hansen, L. L., Artiles, K. L., Nonet, M. L., Fire, A. Z.
2014; 42 (22): 13778-13787
- **Efficient Marker-Free Recovery of Custom Genetic Modifications with CRISPR/Cas9 in *Caenorhabditis elegans*** *GENETICS*
Arribere, J. A., Bell, R. T., Fu, B. X., Artiles, K. L., Hartman, P. S., Fire, A. Z.
2014; 198 (3): 837-U842
- **Immunoglobulin Gene Insertions and Deletions in the Affinity Maturation of HIV-1 Broadly Reactive Neutralizing Antibodies** *CELL HOST & MICROBE*
Kepler, T. B., Liao, H., Alam, S. M., Bhaskarabhatla, R., Zhang, R., Yandava, C., Stewart, S., Anasti, K., Kelsoe, G., Parks, R., Lloyd, K. E., Stolarchuk, C., Pritchett, et al
2014; 16 (3): 304-313
- **Human responses to influenza vaccination show seroconversion signatures and convergent antibody rearrangements.** *Cell host & microbe*
Jackson, K. J., Liu, Y., Roskin, K. M., Glanville, J., Hoh, R. A., Seo, K., Marshall, E. L., Gurley, T. C., Moody, M. A., Haynes, B. F., Walter, E. B., Liao, H., Albrecht, et al
2014; 16 (1): 105-114
- **Effects of Aging, Cytomegalovirus Infection, and EBV Infection on Human B Cell Repertoires** *JOURNAL OF IMMUNOLOGY*
Wang, C., Liu, Y., Xu, L. T., Jackson, K. J., Roskin, K. M., Pham, T. D., Laserson, J., Marshall, E. L., Seo, K., Lee, J., Furman, D., Koller, D., Dekker, et al

2014; 192 (2): 603-611

- **Gamete-Type Dependent Crossover Interference Levels in a Defined Region of *Caenorhabditis elegans* Chromosome V.** *G3 (Bethesda, Md.)*
Gabdank, I., Fire, A. Z.
2014; 4 (1): 117-120
- **A requirement for ERK-dependent Dicer phosphorylation in coordinating oocyte-to-embryo transition in *C. elegans*.** *Developmental cell*
Drake, M. n., Furuta, T. n., Suen, K. M., Gonzalez, G. n., Liu, B. n., Kalia, A. n., Ladbury, J. E., Fire, A. Z., Skeath, J. B., Arur, S. n.
2014; 31 (5): 614–28
- **Comprehensive whole-genome sequencing of an early-stage primary myelofibrosis patient defines low mutational burden and non-recurrent candidate genes.** *Haematologica*
Merker, J. D., Roskin, K. M., Ng, D., Pan, C., Fisk, D. G., King, J. J., Hoh, R., Stadler, M., Okumoto, L. M., Abidi, P., Hewitt, R., Jones, C. D., Gojenola, et al
2013; 98 (11): 1689-1696
- **Unusual DNA packaging characteristics in endoreduplicated *Caenorhabditis elegans* oocytes defined by in vivo accessibility to an endogenous nuclease activity** *EPIGENETICS & CHROMATIN*
Gu, S. G., Goszczynski, B., McGhee, J. D., Fire, A. Z.
2013; 6
- **Conserved translome remodeling in nematode species executing a shared developmental transition.** *PLoS genetics*
Stadler, M., Fire, A.
2013; 9 (10)
- **The transcription start site landscape of *C. elegans*** *GENOME RESEARCH*
Saito, T. L., Hashimoto, S., Gu, S. G., Morton, J. J., Stadler, M., Blumenthal, T., Fire, A., Morishita, S.
2013; 23 (8): 1348-1361
- **Convergent antibody signatures in human dengue.** *Cell host & microbe*
Parameswaran, P., Liu, Y., Roskin, K. M., Jackson, K. K., Dixit, V. P., Lee, J., Artilles, K. L., Zompi, S., Vargas, M. J., Simen, B. B., Hanczaruk, B., McGowan, K. R., Tariq, et al
2013; 13 (6): 691-700
- **Co-evolution of a broadly neutralizing HIV-1 antibody and founder virus.** *Nature*
Liao, H., Lynch, R., Zhou, T., Gao, F., Alam, S. M., Boyd, S. D., Fire, A. Z., Roskin, K. M., Schramm, C. A., Zhang, Z., Zhu, J., Shapiro, L., Mullikin, et al
2013; 496 (7446): 469-476
- **Minicircle DNA vectors achieve sustained expression reflected by active chromatin and transcriptional level.** *Molecular therapy : the journal of the American Society of Gene Therapy*
Gracey Maniar, L. E., Maniar, J. M., Chen, Z., Lu, J., Fire, A. Z., Kay, M. A.
2013; 21 (1): 131-138
- **Contributions of mRNA abundance, ribosome loading, and post- or peri-translational effects to temporal repression of *C-elegans* heterochronic miRNA targets** *GENOME RESEARCH*
Stadler, M., Artilles, K., Pak, J., Fire, A.
2012; 22 (12): 2418-2426
- **Whole Genome Sequence Analysis of Primary Myelofibrosis.** *54th Annual Meeting and Exposition of the American-Society-of-Hematology (ASH)*
Merker, J. D., Roskin, K., Ng, D., Pan, C., Fisk, D. G., Jones, C. D., Gojenola, L., Clark, M. J., Zhang, B., Cherry, M., Snyder, M., Boyd, S. D., Zehnder, et al
AMER SOC HEMATOLOGY.2012
- **Protection from Feed-Forward Amplification in an Amplified RNAi Mechanism** *CELL*
Pak, J., Maniar, J. M., Mello, C. C., Fire, A.
2012; 151 (4): 885-899
- **The Extragenic Spacer Length Between the 5' and 3' Ends of the Transgene Expression Cassette Affects Transgene Silencing From Plasmid-based Vectors** *MOLECULAR THERAPY*
Lu, J., Zhang, F., Xu, S., Fire, A. Z., Kay, M. A.

2012; 20 (11): 2111-2119

- **A nuclear Argonaute promotes multigenerational epigenetic inheritance and germline immortality** *NATURE*
Buckley, B. A., Burkhart, K. B., Gu, S. G., Spracklin, G., Kershner, A., Fritz, H., Kimble, J., Fire, A., Kennedy, S.
2012; 489 (7416): 447-451
- **Amplification of siRNA in *Caenorhabditis elegans* generates a transgenerational sequence-targeted histone H3 lysine 9 methylation footprint** *NATURE GENETICS*
Gu, S. G., Pak, J., Guang, S., Maniar, J. M., Kennedy, S., Fire, A.
2012; 44 (2): 157-164
- **The Inference of Phased Haplotypes for the Immunoglobulin H Chain V Region Gene Loci by Analysis of VDJ Gene Rearrangements** *JOURNAL OF IMMUNOLOGY*
Kidd, M. J., Chen, Z., Wang, Y., Jackson, K. J., Zhang, L., Boyd, S. D., Fire, A. Z., Tanaka, M. M., Gaeta, B. A., Collins, A. M.
2012; 188 (3): 1333-1340
- **High-throughput VDJ sequencing for quantification of minimal residual disease in chronic lymphocytic leukemia and immune reconstitution assessment** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Logan, A. C., Gao, H., Wang, C., Sahaf, B., Jones, C. D., Marshall, E. L., Buno, I., Armstrong, R., Fire, A. Z., Weinberg, K. I., Mindrinos, M., Zehnder, J. L., Boyd, et al
2011; 108 (52): 21194-21199
- **Wobble base-pairing slows in vivo translation elongation in metazoans** *RNA-A PUBLICATION OF THE RNA SOCIETY*
Stadler, M., Fire, A.
2011; 17 (12): 2063-2073
- **Initial antibodies binding to HIV-1 gp41 in acutely infected subjects are polyreactive and highly mutated** *JOURNAL OF EXPERIMENTAL MEDICINE*
Liao, H., Chen, X., Munshaw, S., Zhang, R., Marshall, D. J., Vandergrift, N., Whitesides, J. F., Lu, X., Yu, J., Hwang, K., Gao, F., Markowitz, M., Heath, et al
2011; 208 (11): 2237-2249
- **Competition between ADAR and RNAi pathways for an extensive class of RNA targets** *NATURE STRUCTURAL & MOLECULAR BIOLOGY*
Wu, D., Lamm, A. T., Fire, A. Z.
2011; 18 (10): 1094-U24
- **'Inc-miRs': functional intron-interrupted miRNA genes** *GENES & DEVELOPMENT*
Zhang, H., Maniar, J. M., Fire, A. Z.
2011; 25 (15): 1589-1594
- **Determinants of nucleosome organization in primary human cells** *NATURE*
Valouev, A., Johnson, S. M., Boyd, S. D., Smith, C. L., Fire, A. Z., Sidow, A.
2011; 474 (7352): 516-U148
- **Up-Regulated Dicer Expression in Patients with Cutaneous Melanoma** *PLOS ONE*
Ma, Z., Swede, H., Cassarino, D., Fleming, E., Fire, A., Dadras, S. S.
2011; 6 (6)
- **On the nature of in vivo requirements for *rde-4* in RNAi and developmental pathways in *C. elegans*** *RNA BIOLOGY*
Blanchard, D., Parameswaran, P., Lopez-Molina, J., Gent, J., Saynuk, J. F., Fire, A.
2011; 8 (3): 458-467
- **EGO-1, a *C. elegans* RdRP, Modulates Gene Expression via Production of mRNA-Templated Short Antisense RNAs** *CURRENT BIOLOGY*
Maniar, J. M., Fire, A. Z.
2011; 21 (6): 449-459
- **Multimodal RNA-seq using single-strand, double-strand, and CirLigase-based capture yields a refined and extended description of the *C. elegans* transcriptome** *GENOME RESEARCH*
Lamm, A. T., Stadler, M. R., Zhang, H., Gent, J. I., Fire, A. Z.
2011; 21 (2): 265-275

- **Cell autonomous specification of temporal identity by *Caenorhabditis elegans* microRNA lin-4** *DEVELOPMENTAL BIOLOGY*
Zhang, H., Fire, A. Z.
2010; 344 (2): 603-610
- **Distributed probing of chromatin structure in vivo reveals pervasive chromatin accessibility for expressed and non-expressed genes during tissue differentiation in *C. elegans*** *BMC GENOMICS*
Sha, K., Gu, S. G., Pantalena-Filho, L. C., Goh, A., Fleenor, J., Blanchard, D., Krishna, C., Fire, A.
2010; 11
- **An in vitro-identified high-affinity nucleosome-positioning signal is capable of transiently positioning a nucleosome in vivo** *EPIGENETICS & CHROMATIN*
Gracey, L. E., Chen, Z., Maniar, J. M., Valouev, A., Sidow, A., Kay, M. A., Fire, A. Z.
2010; 3
- **Individual Variation in the Germline Ig Gene Repertoire Inferred from Variable Region Gene Rearrangements** *JOURNAL OF IMMUNOLOGY*
Boyd, S. D., Gaeta, B. A., Jackson, K. J., Fire, A. Z., Marshall, E. L., Merker, J. D., Maniar, J. M., Zhang, L. N., Sahaf, B., Jones, C. D., Simen, B. B., Hanczaruk, B., Nguyen, et al
2010; 184 (12): 6986-6992
- **Ultra-high throughput sequencing-based small RNA discovery and discrete statistical biomarker analysis in a collection of cervical tumours and matched controls** *BMC BIOLOGY*
Witten, D., Tibshirani, R., Gu, S. G., Fire, A., Lui, W.
2010; 8
- **Human tRNA-derived small RNAs in the global regulation of RNA silencing** *RNA-A PUBLICATION OF THE RNA SOCIETY*
Haussecker, D., Huang, Y., Lau, A., Parameswaran, P., Fire, A. Z., Kay, M. A.
2010; 16 (4): 673-695
- **Distinct Phases of siRNA Synthesis in an Endogenous RNAi Pathway in *C. elegans* Soma** *MOLECULAR CELL*
Gent, J. I., Lamm, A. T., Pavelec, D. M., Maniar, J. M., Parameswaran, P., Tao, L., Kennedy, S., Fire, A. Z.
2010; 37 (5): 679-689
- **Six RNA Viruses and Forty-One Hosts: Viral Small RNAs and Modulation of Small RNA Repertoires in Vertebrate and Invertebrate Systems** *PLOS PATHOGENS*
Parameswaran, P., Sklan, E., Wilkins, C., Burgon, T., Samuel, M. A., Lu, R., Ansel, K. M., Heissmeyer, V., Einav, S., Jackson, W., Doukas, T., Paranjape, S., Polacek, et al
2010; 6 (2)
- **Partitioning the *C. elegans* genome by nucleosome modification, occupancy, and positioning** *CHROMOSOMA*
Guoping, S., Fire, A.
2010; 119 (1): 73-87
- **Measurement and Clinical Monitoring of Human Lymphocyte Clonality by Massively Parallel V-D-J Pyrosequencing** *SCIENCE TRANSLATIONAL MEDICINE*
Boyd, S. D., Marshall, E. L., Merker, J. D., Maniar, J. M., Zhang, L. N., Sahaf, B., Jones, C. D., Simen, B. B., Hanczaruk, B., Nguyen, K. D., Nadeau, K. C., Egholm, M., Miklos, et al
2009; 1 (12)
- **A *Caenorhabditis elegans* RNA-Directed RNA Polymerase in Sperm Development and Endogenous RNA Interference** *GENETICS*
Gent, J. I., Schvarzstein, M., Villeneuve, A. M., Gu, S. G., Jantsch, V., Fire, A. Z., Baudrimont, A.
2009; 183 (4): 1297-1314
- **Profiling and Discovery of Novel miRNAs from Formalin-Fixed, Paraffin-Embedded Melanoma and Nodal Specimens** *JOURNAL OF MOLECULAR DIAGNOSTICS*
Ma, Z., Lui, W., Fire, A., Dadras, S. S.
2009; 11 (5): 420-429
- **Caudal-like PAL-1 directly activates the bodywall muscle module regulator hih-1 in *C. elegans* to initiate the embryonic muscle gene regulatory network** *DEVELOPMENT*
Lei, H., Liu, J., Fukushige, T., Fire, A., Krause, M.
2009; 136 (8): 1241-1249

- **Chromatin-Associated Periodicity in Genetic Variation Downstream of Transcriptional Start Sites** *SCIENCE*
Sasaki, S., Mello, C. C., Shimada, A., Nakatani, Y., Hashimoto, S., Ogawa, M., Matsushima, K., Gu, S. G., Kasahara, M., Ahsan, B., Sasaki, A., Saito, T., Suzuki, et al
2009; 323 (5912): 401-404
- **High-Throughput Sequencing for Diagnosis, Prognosis and Monitoring of Lymphoid Malignancies.** *50th Annual Meeting of the American-Society-of-Hematology/ASH/ASCO Joint Symposium*
Boyd, S. D., Merker, J. D., Zehnder, J. L., Fire, A. Z.
AMER SOC HEMATOLOGY.2008: 1294-94
- **Transmission Dynamics of Heritable Silencing Induced by Double-Stranded RNA in *Caenorhabditis elegans*** *GENETICS*
Alcazar, R. M., Lin, R., Fire, A. Z.
2008; 180 (3): 1275-1288
- **CED-9 and mitochondrial homeostasis in *C-elegans* muscle** *JOURNAL OF CELL SCIENCE*
Tan, F. J., Husain, M., Manlandro, C. M., Koppenol, M., Fire, A. Z., Hill, R. B.
2008; 121 (20): 3373-3382
- **A high-resolution, nucleosome position map of *C. elegans* reveals a lack of universal sequence-dictated positioning** *GENOME RESEARCH*
Valouev, A., Ichikawa, J., Tonthat, T., Stuart, J., Ranade, S., Peckham, H., Zeng, K., Malek, J. A., Costa, G., McKernan, K., Sidow, A., Fire, A., Johnson, et al
2008; 18 (7): 1051-1063
- **Capped small RNAs and MOV10 in human hepatitis delta virus replication** *NATURE STRUCTURAL & MOLECULAR BIOLOGY*
Haussecker, D., Cao, D., Huang, Y., Parameswaran, P., Fire, A. Z., Kay, M. A.
2008; 15 (7): 714-721
- **MicroRNA expression signature of human sarcomas** *ONCOGENE*
Subramanian, S., Lui, W. O., Lee, C. H., Espinosa, I., Nielsen, T. O., Heinrich, M. C., Corless, C. L., Fire, A. Z., van de Rijn, M.
2008; 27 (14): 2015-2026
- **Regulation of apoptosis by *C-elegans* CED-9 in the absence of the C-terminal transmembrane domain** *CELL DEATH AND DIFFERENTIATION*
Tan, F. J., Fire, A. Z., Hill, R. B.
2007; 14 (11): 1925-1935
- **A pyrosequencing-tailored nucleotide barcode design unveils opportunities for large-scale sample multiplexing** *NUCLEIC ACIDS RESEARCH*
Parameswaran, P., Jalili, R., Tao, L., Shokralla, S., Gharizadeh, B., Ronaghi, M., Fire, A. Z.
2007; 35 (19)
- **Connector Inversion Probe Technology: A Powerful One-Primer Multiplex DNA Amplification System for Numerous Scientific Applications** *PLOS ONE*
Akhras, M. S., Unemo, M., Thiyagarajan, S., Nyren, P., Davis, R. W., Fire, A. Z., Pourmand, N.
2007; 2 (9)
- **Distinct ribonucleoprotein reservoirs for microRNA and siRNA populations in *C-elegans*** *RNA-A PUBLICATION OF THE RNA SOCIETY*
Gu, S. G., Pak, J., Barberan-Soler, S., Ali, M., Fire, A., Zahler, A. M.
2007; 13 (9): 1492-1504
- **Patterns of known and novel small RNAs in human cervical cancer** *CANCER RESEARCH*
Lui, W., Pourmand, N., Patterson, B. K., Fire, A.
2007; 67 (13): 6031-6043
- **Distinct populations of primary and secondary effectors during RNAi in *C-elegans*** *SCIENCE*
Pak, J., Fire, A.
2007; 315 (5809): 241-244
- **Gene silencing by double-stranded RNA (Nobel Lecture).** *Angewandte Chemie (International ed. in English)*
Fire, A. Z.

2007; 46 (37): 6966-6984

- **Gene silencing by double-stranded RNA (Nobel lecture)** *ANGEWANDTE CHEMIE-INTERNATIONAL EDITION*
Fire, A. Z.
2007; 46 (37): 6967-6984
- **Flexibility and constraint in the nucleosome core landscape of *Caenorhabditis elegans* chromatin** *GENOME RESEARCH*
Johnson, S. M., Tan, F. J., McCullough, H. L., Riordan, D. P., Fire, A. Z.
2006; 16 (12): 1505-1516
- **A differential cytolocalization assay for analysis of macromolecular assemblies in the eukaryotic cytoplasm** *MOLECULAR & CELLULAR PROTEOMICS*
Blanchard, D., Hutter, H., Fleenor, J., Fire, A.
2006; 5 (11): 2175-2184
- **An antagonistic role for the *C-elegans* Schnurri homolog SMA-9 in modulating TGF beta signaling during mesodermal patterning** *DEVELOPMENT*
Foehr, M. L., Lindy, A. S., Fairbank, R. C., Amin, N. M., Xu, M., Yanowitz, J., Fire, A. Z., Liu, J.
2006; 133 (15): 2887-2896
- **Unusual DNA structures associated with germline genetic activity in *Caenorhabditis elegans*** *GENETICS*
Fire, A., Alcazar, R., Tan, F.
2006; 173 (3): 1259-1273
- **Structural analysis of hyperperiodic DNA from *Caenorhabditis elegans*** *NUCLEIC ACIDS RESEARCH*
Moreno-Herrero, F., Seidel, R., Johnson, S. M., Fire, A., Dekker, N. H.
2006; 34 (10): 3057-3066
- **Nucleic acid structure and intracellular immunity: some recent ideas from the world of RNAi** *Workshop on Fundamentals of Biomolecular Function - Nucleic Acids, Proteins and Membranes*
Fire, A.
CAMBRIDGE UNIV PRESS.2005: 303-9
- **Imprinting capacity of gamete lineages in *Caenorhabditis elegans*** *GENETICS*
Sha, K., Fire, A.
2005; 170 (4): 1633-1652
- **Cyclin D involvement demarcates a late transition in *C-elegans* embryogenesis** *DEVELOPMENTAL BIOLOGY*
Yanowitz, J., Fire, A.
2005; 279 (1): 244-251
- **UNC-39, the *C-elegans* homolog of the human myotonic dystrophy-associated homeodomain protein Six5, regulates cell motility and differentiation** *DEVELOPMENTAL BIOLOGY*
Yanowitz, J. L., Shakir, M. A., Hedgecock, E., Hutter, H., Fire, A. Z., Lundquist, E. A.
2004; 272 (2): 389-402
- **Inducible systemic RNA silencing in *Caenorhabditis elegans*** *MOLECULAR BIOLOGY OF THE CELL*
Timmons, L., Tabara, H., Mello, C. C., Fire, A. Z.
2003; 14 (7): 2972-2983
- **Loss of the putative RNA-directed RNA polymerase RRF-3 makes *C. elegans* hypersensitive to RNAi** *CURRENT BIOLOGY*
Simmer, F., Tijsterman, M., Parrish, S., Koushika, S. P., Nonet, M. L., Fire, A., Ahringer, J., Plasterk, R. H.
2002; 12 (15): 1317-1319
- **Rescue of polyglutamine-mediated cytotoxicity by double-stranded RNA-mediated RNA interference** *HUMAN MOLECULAR GENETICS*
Caplen, N. J., Taylor, J. P., Statham, V. S., Tanaka, F., Fire, A., Morgan, R. A.
2002; 11 (2): 175-184
- **The T-box factor MLS-1 acts as a molecular switch during specification of nonstriated muscle in *C-elegans*** *GENES & DEVELOPMENT*
Kostas, S. A., Fire, A.
2002; 16 (2): 257-269

- **On the role of RNA amplification in dsRNA-triggered gene silencing** *CELL*
Sijen, T., Fleenor, J., Simmer, F., Thijssen, K. L., Parrish, S., Timmons, L., Plasterk, R. H., Fire, A.
2001; 107 (4): 465-476
- **Distinct roles for RDE-1 and RDE-4 during RNA interference in *Caenorhabditis elegans*** *RNA-A PUBLICATION OF THE RNA SOCIETY*
Parrish, S., Fire, A.
2001; 7 (10): 1397-1402
- **Specific inhibition of gene expression by small double-stranded RNAs in invertebrate and vertebrate systems** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Caplen, N. J., Parrish, S., Imani, F., Fire, A., Morgan, R. A.
2001; 98 (17): 9742-9747
- **Genes and mechanisms related to RNA interference regulate expression of the small temporal RNAs that control *C-elegans* developmental timing** *CELL*
Grishok, A., Pasquinelli, A. E., Conte, D., Li, N., Parrish, S., Ha, I., Baillie, D. L., Fire, A., Ruvkun, G., Mello, C. C.
2001; 106 (1): 23-34
- **Ingestion of bacterially expressed dsRNAs can produce specific and potent genetic interference in *Caenorhabditis elegans*** *GENE*
Timmons, L., Court, D. L., Fire, A.
2001; 263 (1-2): 103-112
- **Overlapping roles of two Hox genes and the exd ortholog *ceh-20* in diversification of the *C-elegans* postembryonic mesoderm** *DEVELOPMENT*
Liu, J., Fire, A.
2000; 127 (23): 5179-5190
- **Essential roles for *Caenorhabditis elegans* lamin gene in nuclear organization, cell cycle progression, and spatial organization of nuclear pore complexes** *MOLECULAR BIOLOGY OF THE CELL*
Liu, J., Ben-Shahar, T. R., Riemer, D., Treinin, M., Spann, P., Weber, K., Fire, A., Gruenbaum, Y.
2000; 11 (11): 3937-3947
- **Functional anatomy of a dsRNA trigger: Differential requirement for the two trigger strands in RNA interference** *MOLECULAR CELL*
Parrish, S., Fleenor, J., Xu, S. Q., Mello, C., Fire, A.
2000; 6 (5): 1077-1087
- **The MADS-Box factor *CeMEF2* is not essential for *Caenorhabditis elegans* myogenesis and development** *DEVELOPMENTAL BIOLOGY*
Dichoso, D., Brodigan, T., Chwoe, K. Y., Lee, J. S., Llacer, R., Park, M., Corsi, A. K., Kostas, S. A., Fire, A., Ahnn, J., Krause, M.
2000; 223 (2): 431-440
- **dsRNA-mediated gene silencing in cultured *Drosophila* cells: a tissue culture model for the analysis of RNA interference** *GENE*
Caplen, N. J., Fleenor, J., Fire, A., Morgan, R. A.
2000; 252 (1-2): 95-105
- **Identification and molecular-genetic characterization of a LAMP/CD68-like protein from *Caenorhabditis elegans*** *JOURNAL OF CELL SCIENCE*
Kostich, M., Fire, A., Fambrough, D. M.
2000; 113 (14): 2595-2606
- ***Caenorhabditis elegans* Twist plays an essential role in non-striated muscle development** *DEVELOPMENT*
Corsi, A. K., Kostas, S. A., Fire, A., Krause, M.
2000; 127 (10): 2041-2051
- **Recognition and silencing of repeated DNA** *ANNUAL REVIEW OF GENETICS*
Hsieh, J., Fire, A.
2000; 34: 187-204
- **The RING finger/B-box factor *TAM-1* and a retinoblastoma-like protein *LIN-35* modulate context-dependent gene silencing in *Caenorhabditis elegans*** *GENES & DEVELOPMENT*
Hsieh, J., Liu, J., Kostas, S. A., Chang, C., Sternberg, P. W., Fire, A.

1999; 13 (22): 2958-2970

- **The rde-1 gene, RNA interference, and transposon silencing in C-elegans** *CELL*
Tabara, H., Sarkissian, M., Kelly, W. G., Fleenor, J., Grishok, A., Timmons, L., Fire, A., Mello, C. C.
1999; 99 (2): 123-132
- **RNA-triggered gene silencing** *TRENDS IN GENETICS*
Fire, A.
1999; 15 (9): 358-363
- **Two-color GFP expression system for C-elegans** *BIOTECHNIQUES*
Miller, D. M., Desai, N. S., Hardin, D. C., Piston, D. W., Patterson, G. H., Fleenor, J., Xu, S., Fire, A.
1999; 26 (5): 914-?
- **Evolutionary conservation of MyoD function and differential utilization of E proteins** *DEVELOPMENTAL BIOLOGY*
ZHANG, J. M., Chen, L. S., Krause, M., Fire, A., Paterson, B. M.
1999; 208 (2): 465-472
- **RNA as a target of double-stranded RNA-mediated genetic interference in Caenorhabditis elegans** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Montgomery, M. K., Xu, S. Q., Fire, A.
1998; 95 (26): 15502-15507
- **Specific interference by ingested dsRNA** *NATURE*
Timmons, L., Fire, A.
1998; 395 (6705): 854-854
- **Analysis of a Caenorhabditis elegans Twist homolog identifies conserved and divergent aspects of mesodermal patterning** *GENES & DEVELOPMENT*
Harfe, B. D., Gomes, A. V., Kenyon, C., Liu, J., Krause, M., Fire, A.
1998; 12 (16): 2623-2635
- **Chromatin silencing and the maintenance of a functional germline in Caenorhabditis elegans** *DEVELOPMENT*
Kelly, W. G., Fire, A.
1998; 125 (13): 2451-2456
- **Double-stranded RNA as a mediator in sequence-specific genetic silencing and co-suppression** *TRENDS IN GENETICS*
Montgomery, M. K., Fire, A.
1998; 14 (7): 255-258
- **MyoD and the specification of muscle and non-muscle fates during postembryonic development of the C-elegans mesoderm** *DEVELOPMENT*
Harfe, B. D., Branda, C. S., Krause, M., Stern, M. J., Fire, A.
1998; 125 (13): 2479-2488
- **Potent and specific genetic interference by double-stranded RNA in Caenorhabditis elegans** *NATURE*
Fire, A., Xu, S. Q., Montgomery, M. K., Kostas, S. A., Driver, S. E., Mello, C. C.
1998; 391 (6669): 806-811
- **Muscle and nerve-specific regulation of a novel NK-2 class homeodomain factor in Caenorhabditis elegans** *DEVELOPMENT*
Harfe, B. D., Fire, A.
1998; 125 (3): 421-429
- **Genetically targeted cell disruption in Caenorhabditis elegans** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Harbinder, S., Tavernarakis, N., Herndon, L. A., Kinnell, M., Xu, S. Q., Fire, A., Driscoll, M.
1997; 94 (24): 13128-13133
- **The Caenorhabditis elegans NK-2 homeobox gene ceh-22 activates pharyngeal muscle gene expression in combination with pha-1 and is required for normal pharyngeal development** *DEVELOPMENT*
Okkema, P. G., Ha, E. J., Haun, C., Chen, W., Fire, A.

1997; 124 (20): 3965-3973

- **Caenorhabditis elegans levamisole resistance genes lev-1, unc-29, and unc-38 encode functional nicotinic acetylcholine receptor subunits** *JOURNAL OF NEUROSCIENCE*
Fleming, J. T., Squire, M. D., Barnes, T. M., Tornoe, C., Matsuda, K., Ahnn, J., Fire, A., Sulston, J. E., Barnard, E. A., Sattelle, D. B., Lewis, J. A.
1997; 17 (15): 5843-5857
- **A C-elegans E Daughterless bHLH protein marks neuronal but not striated muscle development** *DEVELOPMENT*
Krause, M., Park, M., ZHANG, J. M., Yuan, J., Harfe, B., Xu, S. Q., Greenwald, I., Cole, M., PATERSON, B., Fire, A.
1997; 124 (11): 2179-2189
- **Distinct requirements for somatic and germline expression of a gene expressed in Caenorhabditis elegans** *GENETICS*
Kelly, W. G., Xu, S. Q., Montgomery, M. K., Fire, A.
1997; 146 (1): 227-238
- **Repression of gene expression in the embryonic germ lineage of C-elegans** *NATURE*
Seydoux, G., Mello, C. C., Pettitt, J., Wood, W. B., Priess, J. R., Fire, A.
1996; 382 (6593): 713-716
- **An inductive interaction in 4-cell stage C-elegans embryos involves APX-1 expression in the signalling cell** *DEVELOPMENT*
Mickey, K. M., Mello, C. C., Montgomery, M. K., Fire, A., Priess, J. R.
1996; 122 (6): 1791-1798
- **ROLLING REPLICATION OF SHORT DNA CIRCLES** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Fire, A., Xu, S. Q.
1995; 92 (10): 4641-4645
- **Whole-mount in situ hybridization for the detection of RNA in Caenorhabditis elegans embryos** *METHODS IN CELL BIOLOGY, VOL 48*
Seydoux, G., Fire, A.
1995; 48: 323-337
- **DNA transformation** *METHODS IN CELL BIOLOGY, VOL 48*
Mello, C., Fire, A.
1995; 48: 451-482
- **ELEMENTS REGULATING CELL-SPECIFIC AND STAGE-SPECIFIC EXPRESSION OF THE C-ELEGANS MYOD FAMILY HOMOLOG HLH-1** *DEVELOPMENTAL BIOLOGY*
Krause, M., HARRISON, S. W., Xu, S. Q., Chen, L. S., Fire, A.
1994; 166 (1): 133-148
- **COMBINATORIAL STRUCTURE OF A BODY MUSCLE-SPECIFIC TRANSCRIPTIONAL ENHANCER IN CAENORHABDITIS-ELEGANS** *JOURNAL OF BIOLOGICAL CHEMISTRY*
JANTSCHPLUNGER, V., Fire, A.
1994; 269 (43): 27021-27028
- **SOMA-GERMLINE ASYMMETRY IN THE DISTRIBUTIONS OF EMBRYONIC RNAs IN CAENORHABDITIS-ELEGANS** *DEVELOPMENT*
Seydoux, G., Fire, A.
1994; 120 (10): 2823-2834
- **THE CAENORHABDITIS-ELEGANS NK-2 CLASS HOMEOPROTEIN CEH-22 IS INVOLVED IN COMBINATORIAL ACTIVATION OF GENE-EXPRESSION IN PHARYNGEAL MUSCLE** *DEVELOPMENT*
Okkema, P. G., Fire, A.
1994; 120 (8): 2175-2186
- **A 4-DIMENSIONAL DIGITAL IMAGE ARCHIVING SYSTEM FOR CELL LINEAGE TRACING AND RETROSPECTIVE EMBRYOLOGY** *COMPUTER APPLICATIONS IN THE BIOSCIENCES*
Fire, A.
1994; 10 (4): 443-447
- **THE CAENORHABDITIS-ELEGANS MYOD HOMOLOG HLH-1 IS ESSENTIAL FOR PROPER MUSCLE FUNCTION AND COMPLETE MORPHOGENESIS** *DEVELOPMENT*

- Chen, L. S., Krause, M., Sepanski, M., Fire, A.
1994; 120 (6): 1631-1641
- **A SCREEN FOR GENETIC-LOCI REQUIRED FOR BODY-WALL MUSCLE DEVELOPMENT DURING EMBRYOGENESIS IN CAENORHABDITIS-ELEGANS** *GENETICS*
Ahn, J., Fire, A.
1994; 137 (2): 483-498
 - **SEQUENCE REQUIREMENTS FOR MYOSIN GENE-EXPRESSION AND REGULATION IN CAENORHABDITIS-ELEGANS** *GENETICS*
Okkema, P. G., HARRISON, S. W., Plunger, V., Aryana, A., Fire, A.
1993; 135 (2): 385-404
 - **THE NOVEL METALLOTHIONEIN GENES OF CAENORHABDITIS-ELEGANS - STRUCTURAL ORGANIZATION AND INDUCIBLE, CELL-SPECIFIC EXPRESSION** *JOURNAL OF BIOLOGICAL CHEMISTRY*
Freedman, J. H., Slice, L. W., Dixon, D., Fire, A., Rubin, C. S.
1993; 268 (4): 2554-2564
 - **MOLECULAR CHARACTERIZATION OF THE HER-1 GENE SUGGESTS A DIRECT ROLE IN CELL SIGNALING DURING CAENORHABDITIS-ELEGANS SEX DETERMINATION** *GENES & DEVELOPMENT*
Perry, M. D., Li, W. Q., Trent, C., Robertson, B., Fire, A., HAGEMAN, J. M., Wood, W. B.
1993; 7 (2): 216-228
 - **HISTOCHEMICAL TECHNIQUES FOR LOCATING ESCHERICHIA-COLI BETA-GALACTOSIDASE ACTIVITY IN TRANSGENIC ORGANISMS** *GENETIC ANALYSIS-BIOMOLECULAR ENGINEERING*
Fire, A.
1992; 9 (5-6): 151-158
 - **BODY-WALL MUSCLE FORMATION IN CAENORHABDITIS-ELEGANS EMBRYOS THAT LACK THE MYOD HOMOLOG HLH-1** *SCIENCE*
Chen, L., Krause, M., Draper, B., Weintraub, H., Fire, A.
1992; 256 (5054): 240-243
 - **FUNCTIONAL CONSERVATION OF NEMATODE AND VERTEBRATE MYOGENIC REGULATORY FACTORS** *1992 SPRING MEETING OF THE BRITISH SOC FOR CELL BIOLOGY : TRANSCRIPTIONAL REGULATION IN CELL DIFFERENTIATION AND DEVELOPMENT*
Krause, M., Fire, A., WHITEHARRISON, S., Weintraub, H., Tapscott, S.
COMPANY OF BIOLOGISTS LTD.1992: 111-115
 - **PRODUCTION OF ANTISENSE RNA LEADS TO EFFECTIVE AND SPECIFIC-INHIBITION OF GENE-EXPRESSION IN C-ELEGANS MUSCLE** *DEVELOPMENT*
Fire, A., Albertson, D., HARRISON, S. W., Moerman, D. G.
1991; 113 (2): 503-514
 - **CEMYOD ACCUMULATION DEFINES THE BODY WALL MUSCLE-CELL FATE DURING C-ELEGANS EMBRYOGENESIS** *CELL*
Krause, M., Fire, A., HARRISON, S. W., Priess, J., Weintraub, H.
1990; 63 (5): 907-919
 - **A MODULAR SET OF LACZ FUSION VECTORS FOR STUDYING GENE-EXPRESSION IN CAENORHABDITIS-ELEGANS** *GENE*
Fire, A., HARRISON, S. W., Dixon, D.
1990; 93 (2): 189-198
 - **VECTORS FOR LOW COPY TRANSFORMATION OF C-ELEGANS** *NUCLEIC ACIDS RESEARCH*
Fire, A., Kondo, K., Waterston, R.
1990; 18 (14): 4269-4270
 - **PROPER EXPRESSION OF MYOSIN GENES IN TRANSGENIC NEMATODES** *EMBO JOURNAL*
Fire, A., Waterston, R. H.
1989; 8 (11): 3419-3428
 - **5,6-DICHLORO-1-BETA-D-RIBOFURANOSYLBENZIMIDAZOLE INHIBITS TRANSCRIPTION ELONGATION BY RNA POLYMERASE-II INVITRO** *JOURNAL OF BIOLOGICAL CHEMISTRY*
Chodosh, L. A., Fire, A., Samuels, M., Sharp, P. A.
1989; 264 (4): 2250-2257

- **INTEGRATIVE TRANSFORMATION OF CAENORHABDITIS-ELEGANS** *EMBO JOURNAL*
Fire, A.
1986; 5 (10): 2673-2680
- **INTERACTIONS BETWEEN RNA POLYMERASE-II, FACTORS, AND TEMPLATE LEADING TO ACCURATE TRANSCRIPTION** *JOURNAL OF BIOLOGICAL CHEMISTRY*
Fire, A., Samuels, M., Sharp, P. A.
1984; 259 (4): 2509-2516
- **DINUCLEOTIDE PRIMING OF TRANSCRIPTION MEDIATED BY RNA POLYMERASE-II** *JOURNAL OF BIOLOGICAL CHEMISTRY*
Samuels, M., Fire, A., Sharp, P. A.
1984; 259 (4): 2517-2525
- **Characterization of tRNA precursor splicing in mammalian extracts.** *journal of biological chemistry*
Laski, F. A., Fire, A. Z., RajBhandary, U. L., Sharp, P. A.
1983; 258 (19): 11974-11980
- **INVITRO TRANSCRIPTION - WHOLE-CELL EXTRACT** *METHODS IN ENZYMOLOGY*
Manley, J. L., Fire, A., Samuels, M., Sharp, P. A.
1983; 101: 568-582
- **CHARACTERIZATION OF TRANSFER-RNA PRECURSOR SPLICING IN MAMMALIAN EXTRACTS** *JOURNAL OF BIOLOGICAL CHEMISTRY*
Laski, F. A., Fire, A. Z., RajBhandary, U. L., Sharp, P. A.
1983; 258 (19): 1974-1980
- **Separation and characterization of factors mediating accurate transcription by RNA polymerase II.** *journal of biological chemistry*
Samuels, M., Fire, A., Sharp, P. A.
1982; 257 (23): 14419-14427
- **SEPARATION AND CHARACTERIZATION OF FACTORS MEDIATING ACCURATE TRANSCRIPTION BY RNA POLYMERASE-II** *JOURNAL OF BIOLOGICAL CHEMISTRY*
Samuels, M., Fire, A., Sharp, P. A.
1982; 257 (23): 4419-4427
- **INVITRO TRANSCRIPTION OF ADENOVIRUS** *JOURNAL OF VIROLOGY*
Fire, A., Baker, C. C., Manley, J. L., Ziff, E. B., Sharp, P. A.
1981; 40 (3): 703-719
- **INHIBITION OF TRANSCRIPTION FACTOR ACTIVITY BY POLIOVIRUS** *CELL*
Crawford, N., Fire, A., Samuels, M., Sharp, P. A., Baltimore, D.
1981; 27 (3): 555-561
- **Regulation of adenovirus mRNA synthesis.** *Annals of the New York Academy of Sciences*
Sharp, P. A., Manley, J., Fire, A., Gefter, M.
1980; 354: 1-15
- **DNA-DEPENDENT TRANSCRIPTION OF ADENOVIRUS GENES IN A SOLUBLE WHOLE-CELL EXTRACT** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA-BIOLOGICAL SCIENCES*
Manley, J. L., Fire, A., Cano, A., Sharp, P. A., Gefter, M. L.
1980; 77 (7): 3855-3859