

RUI FU

RNA Bioscience Initiative, University of Colorado Anschutz Medical Campus

My research interests are in the various aspects of post-transcriptional gene expression regulation, particularly RNA degradation. Alongside 10 years of bench research experience, I have now worked 3 years in computational roles analyzing genomic and high throughput sequencing data.



EDUCATION

2015
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2009

Ph.D. Biological Science

University of California San Diego

📍 La Jolla, CA, USA

2009
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2005

B.S. Biological Science

Xiamen University

📍 Xiamen, Fujian, China

RESEARCH EXPERIENCE

Current
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2017

Semi-Independent Informatics Fellow

Jay Hesselberth's Supervision

📍 University of Colorado Anschutz

- Development of bioinformatics software packages
- RNA-seq analysis and transcriptome annotation improvements for hibernating ground squirrel brain
- Informatics and computational collaboration on various RNA biology projects

CONTACT

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📞 +1 858-344-2507

🔗 github.com/raysinensis

🔗 linkedin.com/in/rui-fu-rna

🔗 raysinensis.com

2017
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2016

Postdoctoral Research Fellow

Judy Lieberman's Lab

📍 Harvard Medical School

- Identification of the mitochondrial trigger of apoptotic mRNA decay
- Purification of cytotoxic granules and key cytolytic proteins
- Mouse genetic manipulation by CRISPR-Cas9, and automated genotyping with custom R app

Bioinformatic tool development:

clustifyr, automated single cell RNA-seq cell identity assignment (author)

squirrelBox, RNA-seq data visualization, exploration, and analysis web browser built with R Shiny and JavaScript (author)

valr, tidyverse-style genomic interval analysis (co-developer)

scraps, extraction of polyadenylation site info from scRNA-seq data (co-developer)

djvdj, analysis of AVID-seq/LIBRA-seq signals alongside single cell VDJ sequencing data (co-developer)

2015
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2009

Graduate Research Assistant

Jens Lykke-Andersen's Lab

📍 University of California San Diego

- Investigation of co-factors involved in ZFP36 (TTP)-mediated mRNA decay and translational repression during the immune response of macrophages
- Characterization of the ZFP36 family proteins in cell cycle progression regulation of mouse embryonic fibroblasts

2009
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2007

Undergraduate Research Assistant

Ruichuan Chen's Lab

📍 Xiamen University

- Exploration of cell cycle and apoptosis implications of the transcription elongation regulator HEXIM1
- Mechanistic characterization of p-TEFb activation by HIV-Tat



TEACHING EXPERIENCE

Current
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2020

Online Lecture Instructor (Graduate Level Courses)

University of Colorado Anschutz

- Teaching and grading with RStudio Cloud for *Informatics and Statistics for Molecular Biology*
- Zoom lecture, paper discussion, and exam/homework design for RNA section of *Foundations in Biomedical Sciences*
- Online lectures for *Workshop for scRNA-seq Data Analysis*

Additional pedagogy training through the Harvard Medical School Scientists Teaching Science Course

Current
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2018

Lecture Instructor (Graduate Level Courses)

University of Colorado Anschutz

- Lecture for RNA sequencing section of *Rigor in Research* (2020)
- Lectures, paper discussion, and exam/homework design for RNA section of *Foundations in Biomedical Sciences* (2018, 2019)
- Course development and lectures for *Practical Data Analysis with R/RStudio* (2018, 2019)
- Course development and lectures for *Workshop for scRNA-seq Data Analysis* (2019)

Developed computational biology course materials:

rnabioco.github.io/practical-data-analysis

rnabioco.github.io/cellar

Current
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2018

Teaching Assistant (Graduate Level Courses)

University of Colorado Anschutz

- *Practical Computational Biology for Biologists: R*
- *Practical Computational Biology for Biologists: Python*
- Paper discussion for *Core Topics in Biomedical Sciences*

Current
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2017

Weekly RNA Bioscience Initiative Informatics Office Hour

University of Colorado Anschutz

- Guidance on RNA and computational research questions from students and researchers of CU Anschutz Medical Campus

2020

RNA Bioscience Initiative Internship Mentoring

University of Colorado Anschutz

- Mentoring of undergraduate summer research, systemically exploring published scRNA-seq cell type signatures in the NCBI Gene Expression Omnibus. Mentee's work is integrated into updates to R Bioconductor packages *clustifyr* and *clustifyrdatahub*
- Mentoring is continuing beyond summer period, now focusing on manuscript preparation and other scRNA-seq aspects

2017

Summer Research Mentoring

Harvard Medical School

- Mentoring of high school student enrolled in the MIT Research Science Institute program in tissue culture, RNA-related bench experiments, RNA-seq informatics analysis, and scientific writing

2015
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2013

BS/MS Student Research Mentoring

University of California San Diego

- Mentoring of student research spanning undergraduate honor thesis and master thesis in biochemical investigations of RNA-binding protein functions
- Mentee was awarded Best Poster Presentation Award at 2014 UCSD Biological Sciences Annual Student Research Showcase

2012
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2011

Teaching Assistant (Undergraduate Level Courses)

University of California San Diego

- *Molecular Biology, DNA Recombination Lab x2*



PUBLICATIONS, AS FIRST AUTHOR

2020

Inclusion of processed cell metadata improves single cell sequencing analysis reproducibility and accessibility

Submitted to *eLife*

- Puntambekar S, Hesselberth J, Riemondy K^c, Fu R^c.

Google Scholar:
tinyurl.com/googlescholar-rf

2020

Post-transcriptional regulation dictates steroidogenic gene expression program kinetics

Submitted to *eLife*

- Fu R^l, Wellman K^l, Daigneault J, Riemondy K, Mukherjee N.

GitHub Projects:
github.com/rnabioco

2020

Dynamic RNA regulation in the brain underlies physiological plasticity in a hibernating mammal

Submitted to *biorxiv* and *Genome Biology*

- Fu R^l, Gillen A^l, Grabek K, Riemondy K, Epperson E, Bustamant C, Hesselberth J, Martin S.

squirrelBox Web App:
tinyurl.com/sqRNABox

2020

clustifyr: an R package for automated single-cell RNA sequencing cluster classification

F1000Research

- Fu R, Gillen A, Sheridan R, Tian C, Daya M, Hao Y, Hesselberth J, Riemondy K.

2018

PNPT1 release from mitochondria during apoptosis triggers decay of poly(A) RNAs

Cell

- Liu X^l, Fu R^l, Pan Y, Meza-Sosa K, Zhang Z, Lieberman J.

2016

Recruitment of the 4EHP-GYF2 cap-binding complex to tetraproline motifs of tristetraprolin promotes repression and degradation of mRNAs with AU-rich elements

RNA

- Fu R, Olsen MT, Webb K, Bennett E, Lykke-Andersen J.

PUBLICATIONS, AS CONTRIBUTING AUTHOR

2020

Molecular tracking devices quantify antigen distribution and archiving in the lymph node

Submitted to *biorxiv* and *Immunity*

- Walsh S, Sheridan R, Doan T, Lucas E, Ware B, **Fu R**, Burchill M, Hesselberth J, Tamburini B.

2020

Single-cell RNA sequencing identifies macrophage transcriptional heterogeneities in granulomatous diseases

Submitted to *American Journal of Respiratory and Critical Care Medicine*

- Liao S, Shaikh A, Konigsberg I, **Fu R**, Davidson E, Li L, Mould K, Fontenot A, Maier L, Yang I.

2019

Monocytic Subclones Confer Resistance to Venetoclax-Based Therapy in Acute Myeloid Leukemia Patients

Cancer Discovery

- Pei S, Polleyea D, Gustafson A, Stevens B, Minhajuddin M, **Fu R**, Riemondy K, Gillen A, Sheridan R, Kim J, Costello J, Amaya M, Inguva A, Winters A, Ye H, Krug A, Jones C, Adane B, Khan N, Ponder J, Schowinsky J, Abbott D, Hammes A, Myers J, Ashton J, Nemkov T, D'Alessandro A, Gutman J, Fesik S, Ramsey H, Savona M, Smith C, Jordan C.

2019

Chronic Liver Disease in Humans Causes Expansion and Differentiation of Liver Lymphatic Endothelial Cells

Frontiers in Immunology

- Tamburini B, Finlon JM, Gillen A, Kriss M, Riemondy K, **Fu R**, Schuyler R, Hesselberth J, Rosen H, Burchill M.

2019

Single cell RNA Sequencing Identifies Transforming Growth Factor β as a Critical Regulator of Alveolar Regeneration

JCI Insight

- Riemondy K, Jansing N, Jiang P, Redente E, Gillen A, **Fu R**, Anthony G, Hesselberth J, Zemans R.

2019

Recovery and analysis of transcriptome subsets from pooled single-cell RNA-seq libraries.

Nucleic Acid Research

- Riemondy K, Ransom M, Alderman C, Gillen A, **Fu R**, Finlay-Schultz J, Kirkpatrick G, Di Paola J, Kabos P, Sartorius C, Hesselberth J.

POSTERS AND TALKS

2020

Towards a comprehensive view of dynamic RNA regulation in hibernating 13-lined ground squirrel

EMBL Conference, From Functional Genomics to Systems Biology
(Poster)

2019	ClustifyR: automated single-cell RNA sequencing cluster classification Keystone Symposia on Single Cell Biology (Poster)
2017	PNPT1 release from the mitochondrial intermembrane space triggers rapid decay of mRNA and poly(A)-tailed ncRNA during apoptosis Boston Children's Hospital PCMM Research Poster Session (Poster)
2016	PNPT1 release from the mitochondrial intermembrane space triggers rapid decay of mRNA during apoptosis Boston Children's Hospital PCMM Research Poster Session (Poster)
2015	TTP-mediated mRNA repression involves recruitment of the 4EHP-GYF2 complex Cold Spring Harbor Laboratory mRNA Processing Meeting (Presentation)
2014	TTP represses translation of target mRNAs through the 4EHP-GYF2 complex UCSD Mechanisms of Gene Expression Seminar (Presentation)
2013	TTP family proteins regulate the stability of retinoblastoma protein mRNAs during serum-stimulated G₀-S transition Cold Spring Harbor Laboratory mRNA Processing Meeting (Poster)
2012	The regulation of TTP family mRNA-decay factors during G₀-S cell cycle progression Keystone Symposia on Protein-RNA Interactions (Poster)

► SERVICE

Current 2020	RNA Society Volunteer
Current 2020	Organizer for CU-Anschutz Immuno-Informatics Joint Journal Club
Current 2019	RNA Bioscience Initiative Grant Review
Current 2018	<i>GENETICS</i> Early Career Reviewer (Cellular Genetics section) 4 manuscripts reviewed for <i>GENETICS</i> and <i>G3</i> , tinyurl.com/rev-rf
Current 2011	Peer review of manuscripts under Dr Lykke-Andersen, Dr Lieberman, Dr Hesselberth
2019	Admissions Committee for CU Graduate Experiences for Multicultural Students
2019	Mentor for CU Anschutz and Denver Campus ISCORE undergraduate mentorship program
2012	Organizer for UCSD Ethics Center's Silent Spring (50th Anniversary) Project

Society memberships:

RNA Society

International Society for Computational Biology

Genetics Society of America



RECOGNITION AND TRAINING

2018	BioFrontiers Hackathon
2017	Data Incubator Data Science Fellowship
2016	Grant writing training under Dr Lieberman
2016	Harvard Medical School Scientists Teaching Science Course
2011	Dr Huang Memorial Scholarship, UC San Diego
2009	
2009	National College Students Creativity Experiment Project
2007	
2008	First-Class Scholarship
2006	
2008	XMU University Merit Student
2006	



SCIENCE OUTREACH

Current	Facilitator at Denver Museum of Nature and Science - Prehistoric Journey section
2019	
2017	Visitor Education Volunteer at the New England Aquarium
2016	
2016	Information Ambassador at the San Diego Zoo
2015	

~500 hours of weekend volunteering time logged

Made with [pagedown](#).

Code at github.com/raysinensis/cv.

Last updated on 2020-11-06.