
ONUR KANISICAK, Ph.D.

Address:

Regenerative Medicine Group
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☞ **Current Academic Appointment :**

2018 Assistant Professor (Tenure track) Regenerative Medicine Group
Department of Pathology and Laboratory Medicine
College of Medicine
University of Cincinnati

Research Topics:

- ☞ The role and potential of non-myocyte lineages in myocardial disease and regeneration.
- ☞ New therapeutic targets to promote cardiac regeneration and prevention of heart failure
- ☞ The function and potential of mesenchymal cells in skeletal muscle homeostasis, regeneration, disease, and aging.

☞ **Education :**

2011 Ph.D.	Genetics and Genomics,	University of Connecticut, Dep. of Molecular and Cell Biology, Storrs, CT
2005 M.S.	Genetics,	University of Connecticut Dep. of Molecular and Cell Biology, Storrs, CT
2003 B.S.	Biomedical Sciences,	Istanbul University, Cerrahpasa Faculty of Medicine, Istanbul, Turkey

☞ **Research Experience :**

Sep 2011 – Feb 2018 **Postdoctoral Research Fellow** in Molecular Cardiovascular Biology,
Cincinnati Children's Hospital Medical Center, HHMI, Cincinnati, OH
Advisor: Jeffery D. Molkentin, Ph.D.

Research Topics:

- ☞ The role and potential of c-kit lineage stem cells in myocardial disease and regeneration.
- ☞ The origin and role of resident fibroblasts in cardiac homeostasis, repair, and disease.

Aug 2005 – Aug 2011 **Graduate Research Assistant** in Molecular and Cell Biology,
The University of Connecticut, Dep. of Molecular and Cell Biology,
Center for Regenerative Biology, Storrs, CT
Advisor: David J. Goldhamer, Ph.D.

Research Topic:

- ☞ Investigating the developmental origin and self-renewal capacity of skeletal muscle satellite cells.

Feb 2005 - Aug 2005 **Voluntary Research Assistant** in Developmental Biology Laboratory
David J. Goldhamer's Lab, University of Connecticut, Storrs, CT

Jan 2004 - May 2004 **Voluntary Research Assistant** in Developmental Biology Laboratory
Prof. Thomas T. Chen's Lab, University of Connecticut, Storrs, CT

Feb 2003 - May 2003	Internship , Molecular Forensics Laboratory, Istanbul University, Cerrahpasa Faculty of Medicine, Istanbul, Turkey
Sep 2002 - Dec 2002	Internship , Microbiology diagnostics Laboratory, Istanbul University, Cerrahpasa Faculty of Medicine, Istanbul, Turkey
Sep 2000 - Aug 2002	Undergraduate Research Assistant , Laboratory Animal Development facility, Prof. Tuncay Altug's Lab , Istanbul University, Cerrahpasa Faculty of Medicine, Istanbul, Turkey

☞ **Teaching Experience :**

Academic Teaching Activities :

University of Cincinnati :

Director, Methods in Biomedical Research	<i>3 credit, 16 weeks</i>	Fall 2019 – Present
The University of Cincinnati, Department of Pathobiology and Molecular Medicine, OH		
Director, Pathobiology and Molecular Medicine Career Development Seminars		Fall 2018 – Present
The University of Cincinnati, Department of Pathobiology and Molecular Medicine, OH		
Lecturer, Human Medical Genetics		Spring 2019 – Present
The University of Cincinnati, Department of Molecular Genetics, Biochemistry and Microbiology, OH		
Co-director, Methods in Biomedical Research	<i>3 credit, 16 weeks</i>	Fall 2018
The University of Cincinnati, Department of Pathobiology and Molecular Medicine, OH		

Cincinnati Children's Hospital Medical Center :

Lecturer, Advanced Topics in Developmental Biology		Spring 2019 – Present
CCHMC, Molecular and Developmental Biology Graduate Program, OH		

University of Connecticut - prior to faculty appointment :

Teaching Assistant, Principles of Biology (BIO 1107)		Aug 2010 - Dec 2010
The University of Connecticut, Department of Molecular and Cell Biology, Storrs, CT		
Cell Biology Summer Lab Instructor, (CEP)		July 2006 - Aug 2006
The University of Connecticut, Department of Molecular and Cell Biology, Storrs, CT		
Teaching Assistant, Human Genetics (MCB 200)		Aug 2006 - Dec 2006
The University of Connecticut, Department of Molecular and Cell Biology, Storrs, CT		
Teaching Assistant, Developmental Biology (MCB219/331)		Jan 2006 - May 2006
The University of Connecticut, Department of Molecular and Cell Biology, Storrs, CT		
Teaching Assistant, Human Genetics (MCB 200)		Aug 2005 - Dec 2005
The University of Connecticut, Department of Molecular and Cell Biology, Storrs, CT		

☞ **Training and Mentorship Activities :**

Past and Current Trainees:

Post-doctoral fellows:

Oct 2018 – Present	Research <i>Mentor</i> , Perwez Alam, Ph.D.
June 2019 – Present	Research <i>Mentor</i> , Malina Ivey, Ph.D.

Graduate students:

Aug 2018 - **Present** *Thesis Committee Chair and Primary Advisor, Shannon Mackenzie Jones, BS
(Fall 2018: PMM graduate program, G1, UC, OH)*

MD-PhD students:

Nov 2019 – **Present** *Research Mentor, Bryan Maliken, MSTP, Senior Project Research.*

Medical students:

Oct 2018 – Aug 2018 *Research Mentor, Brandon Nidea, BS, Summer Research Rotation.
(Fall 2018: M2, UC COM, OH)*

Post Baccalaureate:

Feb 2018 – Dec 2018 *Research Mentor, Yanli Zhao, MD, Visiting Scholar Program (China).*

Feb 2018 – Sep 2018 *Research Mentor, Zhenling Liu, MD, Cincinnati State Co-Op Research Internship.
(Fall 2018: Sonography, Cincinnati State, OH)*

May 2019 – **Present** *Research Mentor, Ping Sha, MD, Visiting Scholar Program (China).*

Undergraduates:

Aug 2019 – Present *McNair Scholars Program, Research Mentor, Tasneem Ikram,
Undergraduate Research (BS in Medical Laboratory Sciences, University Cincinnati)*

June 2019 – Aug 2019 *Research Mentor, Manasaa Kannan, Undergraduate SURF Research Project.
(BS in Economics and Finance and minor in Biology, Centre College)*

Oct 2018 – Dec 2018 *Research Mentor, Sarfraz K. Imtiaz, Undergraduate Research Project.
(Biological Science/CHEM, Minor: Medical Sciences, UC)*

High school students:

June 2018 – Aug 2018 *Research Mentor, Elyse Martin, Summer Research Intern.
(Fall 2018: First-year UC Medical Sciences program, OH)*

June 2018 - Aug 2018 *Research Mentor, Kaiti Ness, Summer Research Intern.
(Fall 2018: Junior at the Greenhill School, Dallas, TX)*

Thesis, Dissertation, and Other Committees Concerned with Medical and Graduate Education :

Dec 2018 – Present *Thesis Committee Member, Matt Riccetti, Ph.D. Candidate.*

May 2019 – Present *Strauss fellowship mentoring committee, Mereena George Ushakumary, PhD,
Research Fellow, Div. of Pulmonary Bio., Cincinnati Children's Hospital medical Center*

Sep 2018 *Exam Moderator, Brynne E Whitacre, Thesis Qualifier Oral Exam.*

Aug 2018 - Feb 2019 *Teaching Education Mentor, Brynne E Whitacre, Preparing Future Faculty Program.
(Fall 2018: Methods in Biomedical Sciences Lecture Trainee)*

Aug 2018 - Feb 2019 *Teaching Assistant Mentor, Hannah Russell, Teaching Assistant in Methods Course.
(Fall 2018: Method in Biomedical Sciences Teaching Assistant)*

Prior to Faculty appointment at University of Cincinnati :

☞ Personally supervised and trained 2 PhD, 1 Masters and 2 Honors degree Undergraduate students who graduated with honors theses during my PhD.

- ☞ Personally supervised and trained 2 Postdoctoral Fellows, 1 MD PhD and 2 PhD students during my Postdoctoral Fellowship years.
- ☞ References would be provided upon request.

☞ Awards & Honors :

Teacher of the Year Award, Pathobiology and Molecular Medicine Department, UC	2019
Pathology Research Award Grant (9/18 -10/19)	2018
American Heart Association, Career Development Award, 18CDA34110117	2018
Heart Institute Research Retreat Best Fellow Poster Presentation	2017
Heart Institute Research Retreat Best Research Platform Presentation	2016
Best of AHA Specialty Conferences Poster Sessions	2015
New Investigator Travel Award at the BCVS 2015 Scientific Sessions	2015
Postdoctoral fellowship American Heart Association, Great Rivers Affiliate, 15POST25480009	2015
Spring 2011 MCB Pre-doctoral fellowship	2011
First Place Poster Award, MCB Departmental Retreat	2010
Non-Resident Alien (NRA) MCB Departmental fellowship	2008
First Place Poster Award, MCB Departmental Retreat	2008

☞ Professional Memberships :

American Society of Matrix Biology	Since 2019
Biomedical Sciences Alumni Council (Tibbi Biyologlar Dernegi),	Since 2018
Society for Developmental Biology (14969)	Since 2016
American Heart Association, council on basic cardiovascular sciences (179433293)	Since 2011

☞ Peer Reviewer :

<i>* Circulation Research</i>	<i>* Journal of Molecular and Cellular Cardiology</i>
<i>* Faseb</i>	<i>* American Chemical Society</i>
<i>* OMICS International</i>	<i>* Research and Reports in Biology</i>

☞ Service :

University of Cincinnati :

Apr 2019 – Present	Early Career Cardiovascular Researchers Faculty Advisor Committee Member
Apr 2019 – Present	Internal Medicine Annual Research Symposium Judge (Recurring Yearly)
Mar 2019 – Present	Hughes STEM High School Intersession lab tour lecturer
Aug 2018 – Present	Research Award Committee, Department of Pathology and Laboratory Medicine, UC
Aug 2018 – Present	Pathobiology and Molecular Medicine Graduate Committee, UC
Apr 2018 – Present	Medical Sciences Annual Poster Fair Judge (Recurring Yearly)
Feb 2018 – Present	Visiting Scholar hosting committee member (HLVI UC COM)

Cincinnati Children's Hospital Medical Center – Heart Institute :

Feb 2018 – Present	Visiting Scholar hosting committee member (HI CCHMC)
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American Heart Association :

Aug 2018 – Present	Early Career Mentor
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Grant Reviewer :

Aug 2018 – Present	American Heart Association (AHA) Grant Reviewer
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Special Guest Editor:

Aug 2019 -	Special Issue for “Cardiac Fibrosis”
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Editorial Board :

Dec 2018 – Present Cardiology and Cardiovascular Research
Oct 2019 – Present Mercury ReAudio Editorial Board

☞ **Scientific Peer-Reviewed Journal Publications (Ascending order; Underlined are Correspondence):**

- ☞ **Kanisicak O.***, Mendez J. J.*, Yamamoto S., Yamamoto M., and Goldhamer D. J. (2009). Progenitors of skeletal muscle satellite cells express the muscle determination gene, MyoD. **Dev. Biol.** 332, 131-141.
- ☞ Yamamoto M., Shook N. A., **Kanisicak O.**, Yamamoto S., Wosczyzna M. N., Camp J. R., and Goldhamer D. J. (2009). A multifunctional reporter mouse line for Cre- and FLP-dependent lineage analysis. **Genesis** 47, 107-114.
- ☞ **Kanisicak O.**, Yamamoto S., Yamamoto M., and Goldhamer D. J. Self-renewal capacity of MyoD positive activated satellite cells. *manuscript in preparation*
- ☞ Braitsch C. M., **Kanisicak O.**, Van Berlo J. H., Molkentin J. D., Yutzey K. E. (2013). Differential expression of embryonic epicardial progenitor markers and localization of cardiac fibrosis in adult ischemic injury and hypertensive heart disease. **J Mol Cell Cardiol.** 65:108-19
- ☞ Van Berlo J. H.*, **Kanisicak O.***, Maillet M., Vagnozzi R. J., Karch J., Lin S. J., Middleton R. C., Marba'n E. & Molkentin J. D. (2014). c-kit+ cells minimally contribute cardiomyocytes to the heart. **Nature** 15;509(7500):337-41. ***Authors Contributed Equally.**
- ☞ Accornero F, **Kanisicak O.**, Tjondrokoesoemo A, Attia A. C., McNally E. M., Molkentin J. D. (2014). Myofiber-specific inhibition of TGFβ signaling protects skeletal muscle from injury and dystrophic disease in mice. **Hum Mol Genet.** 20;23(25):6903-15.
- ☞ Karch J., **Kanisicak O.**, Brody M. J., Sargent M. A., Michael D. M., and Molkentin J. D. (2015). Necroptosis interfaces with MOMP and the MPTP 1 in mediating cell death. **PLoS one.** 10(6):e0130520
- ☞ Brody M. J., Schips T. G., Vanhoutte D., **Kanisicak O.**, Karch J., Maliken B. D., Blair N. S., Sargent M. A., Prasad V., Molkentin J. D. (2016). Dissection of thrombospondin-4 domains involved in intracellular adaptive endoplasmic reticulum stress-responsive signaling. **Mol Cell Biol** 36:2–12. doi:10.1128/MCB.00607-15.
- ☞ Tjondrokoesoemo A., Schips T. G., **Kanisicak O.**, Sargent M. A., Molkentin J.D. (2016). Genetic overexpression of serpina3n attenuates muscular dystrophy in mice. **Hum Mol Genet.** 25 (6) , art. no. ddw005 , pp. 1192-1202.
- ☞ Tjondrokoesoemo A., Schips T. G., Sargent M. A., Vanhoutte D., **Kanisicak O.**, Prasad V., Lin S. J., Maillet M., Molkentin J. D. (2016). Cathepsin S Contributes to the Pathogenesis of Muscular Dystrophy in Mice. **J. Biol. Chem.** 2016; 291(19):9920-8.
- ☞ **Kanisicak O.**, Khalil H., Ivey M. J., Karch J., Maliken B. D., Correll R. N., Brody M. J., Lin S. J., Aronow B. J., Tallquist M. D., Molkentin J. D. (2016). Genetic lineage tracing defines myofibroblast origin and function in the injured heart. **Nat Commun.** 7:12260. doi: 10.1038/ncomms12260.
- ☞ Vanhoutte D., Kwong J. Q., Davis J., Schips T. G., Tjondrokoesoemo A., Brody M. J., Sargent M. A., **Kanisicak O.**, Yi H., Gao Q. Q., Rabinowitz J. E., Volk T., McNally E. M., Molkentin J. D. (2016). Thrombospondin expression in myofibers stabilizes muscle membranes. **eLife** 2016;5:e17589.
- ☞ **Kanisicak O.** and Molkentin J. D. (2016). Applying Modern Transcriptomics to Interrogate the Human Cardiac Fibroblast. **JACC: Basic to Translational Science** Volume 1, Issue 7, December 2016, Pages 603–605
- ☞ He L., Huang X., **Kanisicak O.**, Li Y., Wang Y., Li Y., Pu W., Liu Q., Zhang H., Tian X., Zhao H., Liu X., Zhang S., Nie Y., Hu S., Miao X., Wang Q., Wang F., Chen T., Xu Q., Lui K. O., Molkentin J. D., Zhou B. (2017) Preexisting endothelial cells mediate cardiac neovascularization after injury **J Clin Invest.** doi:10.1172/JCI93868.
- ☞ Khalil H., **Kanisicak O.**, Prasad N., Correll R. N., Fu X., Schips T., Vagnozzi R. J., Liu R., Huynh T., Lin S. J., Karch J., Molkentin J. D. (2017) Fibroblast-specific genetic dissection of TGFβ-Smad2/3 signaling in cardiac fibrosis. **J Clin Invest.** (JCI-94753)

- ✎ **Kanisicak O.**, Vagnozzi R. J., Molkentin J. D. (2017) Identity crisis for regenerative cardiac cKit+ cells. **Circ Res.** 2017 Oct 27;121(10):1130-1132. doi: 10.1161/CIRCRESAHA.117.311921.
- ✎ Karch J., Schips T. G., Maliken B. D., Brody M. J., Sargent M. A., **Kanisicak O.**, Molkentin J. D. (2017) Autophagic cell death is dependent on lysosomal membrane permeability through Bax and Bak. **Elife.** 2017 Nov 17;6. pii: e30543. doi: 10.7554/eLife.30543.
- ✎ Accornero F, Schips T. G., Petrosino J. M., Gu S., **Kanisicak O.**, Van Berlo J. H., Molkentin J. D. (2017) BEX 1 is an RNA-dependent mediator of cardiomyopathy. **Nat Commun.** 2017 Nov 30;8(1):1875. doi: 10.1038/s41467-017-02005-1.
- ✎ Fu X., Khalil H., **Kanisicak O.**, Boyer J. G., Vagnozzi R. J., Maliken B. D., Sargent M. A., Prasad V., Valiente-Alandi I., Blaxall B. C., Molkentin J. D. (2018) Defining Fibroblast Differentiated States in the Infarcted Mouse Heart. **J Clin Invest.** 2018;128(5):2127–2143
- ✎ Maliken B. D., **Kanisicak O.**, Karch J., Khalil H., Fu X., Boyer J. G., Prasad V., Zheng Y., Molkentin J. D. (2018) Deletion of Gata4 and Gata6 in the c-Kit Lineage Augments Cellular Fusion in vivo. **Circulation.** 2018 CIRCULATIONAHA.118.033703
- ✎ Alam P., Haile B., Mohammed A., Pandey R., Rokvic M., Nieman M., Maliken B. D., Paul A., Wang Y., Sadayappan S., Ahmed R. PH., and **Kanisicak O.** (2019) Inhibition of senescence associated genes Rb1 and Meis2 in adult cardiomyocytes results in cell cycle reentry and cardiac repair post MI. **J Am Heart Assoc.** 2019 Aug 6;8(15):e012089. doi: 10.1161/JAHA.119.012089.
- ✎ Khalil H., **Kanisicak O.**, Vagnozzi R. J., Johansen A. K., Maliken B. D., Prasad V., Boyer J. G., Brody M. J., Schips T., Kilian K. K., Correll R. N., Kawasaki K., Nagata K., and Molkentin J. D. (2019) Cell-specific ablation of Hsp47 defines the collagen producing cells in the injured heart. **JCI Insights.** 2019 Aug 8; 4(15): e128722.
- ✎ Alexander Evdokiou, **Onur Kanisicak**, Stephanie Gierak, Xiang Zhang, Richard J Bodnar, and Latha Satish. (2019) Characterization of Burn Eschar Pericytes. **Journal of Clinical Medicine Submitted in Review.**
- ✎ Alam P., Ahmed R. PH., and **Kanisicak O.** (2019) Mitochondrial Depletion in Adult Cardiomyocytes Promote Cell Cycle Re-entry. *Manuscript Submitted*
- ✎ Cai W. *, **Kanisicak O.***, Wang L., Liu G., Kim S. W., Li Y., Jiang L., Huang W., Paul C., Xu M., Kranias E. G., and Wang Y. (2019) HAX1 inhibits Mst1 to promote the pro-angiogenic effects of cardiac stem cells for myocardial repair.
- ✎ Brody M. J., Schips T. G., Vanhoutte D., **Kanisicak O.**, Sargent M. A., Molkentin J. D. (2019). Palmitoylation-dependent regulation of cardiomyopathy. *manuscript in preparation*
- ✎ **Kanisicak O.**, Khalil H., Karch J., Maliken B. D., Molkentin J. D. (2019). Activated cardiac myofibroblasts can deactivate and revert to resident fibroblast state upon injury cessation. *manuscript in preparation*
- ✎ **Kanisicak O.**, Khalil H., Fu X., Maliken B. D., Karch J., Molkentin J. D. (2019). Cellular and functional heterogeneity in perivascular fibrosis upon pressure overload injury. *manuscript in preparation*

✎ Research Support :

Ongoing research support:

COM Pat. and Lab. Med. Start-Up	Onur Kanisicak (PI)	02/05/2018 – 02/05/2024
Pathology Tenure Track Start-Up		
18CDA34110117	Onur Kanisicak (PI)	07/01/2018 – 06/30/2021
American Heart Association, Career Development Award		
<i>Title:</i> Deactivating cardiac fibroblasts mediate reverse remodeling upon injury resolution		
F102150	Onur Kanisicak (PI)	09/01/2018 – 09/01/2020
Pathology Research Award Grant		
<i>Title:</i> Determining the role of pericytes and myofibroblasts in acute skin wounds		

F102151	Onur Kanisicak (PI)	12/15/2019 – 12/15/2020
Pathology Research Award Grant		
<i>Title:</i> The role of activated fibroblasts during acute asymptomatic and chronic disease states of <i>Aspergillus fumigatus</i> pulmonary infection		
F102152	Perwez Alam (PI) - Onur Kanisicak (MENTOR)	12/15/2019 – 12/15/2020
Pathology Research Award Grant		
<i>Title:</i> Determine the cardioprotective role of novel paracrine signaling after myocardial infarction in adult animals.		
F102153	Malina Ivey (PI) - Onur Kanisicak (MENTOR)	12/15/2019 – 12/15/2020
Pathology Research Award Grant		
<i>Title:</i> The role of activated fibroblasts during skeletal muscle wound healing and regeneration.		
20POST35200267	Perwez Alam (PI)-Onur Kanisicak (Mentor-Sponsor)	01/01/2020 – 12/31/2021
American Heart Association, Postdoctoral Fellowship		
<i>Title:</i> Uncovering the cardioprotective mechanism of cardiomyocyte cell cycle activation.		
<u>Completed research support</u>		
15POST25480009	Onur Kanisicak (PI)	07/01/2015 – 06/30/2017
Postdoctoral fellowship American Heart Association, Great Rivers Affiliate		
<i>Title:</i> In vivo characterization and ablation of murine cardiac fibroblasts within the normal and pathological heart		

☞ **Selected Presentations and Lectures :**

June 2019	Invited Speaker <i>ASMB 2019 Fibroblasts: The Arbiters of Extracellular Matrix Remodeling</i> , Charlottesville, VA “Distinct Lineages of Fibroblasts Are Responsible for Interstitial or Perivascular Fibrosis in the Heart,”
Feb 2019	Invited Speaker <i>The Center for Translational Fibrosis: Heart Fibrosis Symposium</i> , Cincinnati, OH. “Origin and function of various cardiac interstitial cells that contribute to fibrosis”
Aug 2018	Keynote Speaker <i>Seventh Annual Nationwide Children’s Hospital/OSU Myology Course</i> , Columbus, OH. “Tissue fibrosis and Regeneration.”
Feb 2018	Invited Speaker <i>Ohio State University, College of Medicine at the Department of Physiology and Cell Biology</i> , Columbus, OH. “In vivo characterization of murine cardiac fibroblasts within the normal and pathological heart.”
Sep 2016	Selected Speaker <i>Cincinnati Children’s Heart Institute Research Retreat</i> , Cincinnati, OH. “Activated cardiac myofibroblasts can deactivate and revert to resident fibroblast state upon injury cessation”
Nov 2015	Poster presentation <i>Best of AHA Specialty Conferences Poster Sessions</i> , Orlando, FL. "Resident Cardiac Fibroblasts Give Rise to Periostin+ Myofibroblasts Which are the Primary Mediators of Cardiac Fibrosis"
Oct 2014	Selected Speaker <i>Cardiovascular extracellular matrix in health and disease workshop</i> . Baeza Spain. “In vivo characterization of murine cardiac fibroblasts within normal and pathological heart”
May 2009	Poster presentation <i>Making Muscle in the Embryo and Adult</i> . Columbia University, New York, NY. "Progenitors of skeletal muscle satellite cells express the muscle determination gene, MyoD"
June 2007	Invited Speaker

Stem Cell Retreat 2007. Wesleyan University, Middletown, CT.
"Developmental Origin of Skeletal Muscle Satellite Cells."

Apr 2007 ***Selected Speaker***
Society for Developmental Biology Meeting (NESDB). Woods Hole, MA.
"The embryological origin of muscle satellite cells."

Sep 2006 ***Invited Speaker***
Department of Molecular and Cell Biology Retreat. Storrs, CT
"Investigating the origin of muscle satellite cells."
