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Assistant Professor

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RESEARCH SUMMARY

I am leading the CASE Biomanufacturing and Microfabrication Laboratory (CASE-BML) at Case Western Reserve University. CASE-BML's mission is to improve human health and quality of life by a fundamental understanding of cell biomechanics, and through innovations in micro/nano-engineered devices, biosensors, and point-of-care systems for biology and medicine. Active research themes include:

- Cell biomechanics, specifically red blood cell mechanics,
- Microfluidics, biofluid mechanics, and microcirculation,
- Micro-electrophoresis systems for protein analyses to diagnose hemoglobin disorders,
- Management and monitoring of joint and prosthesis health via microanalyses of synovial fluid,
- Additive micro-manufacturing of functional biological systems and medical devices.

HIGHLIGHTS

- Secured approximately \$3.5 million in foundational, state, and federal research funding, including NSF CAREER award on *biomechanics of red blood cell adhesion and deformability*.
- Established multiple interdisciplinary collaborations across medicine, engineering, and science departments.
- *Innovation in research and creation of knowledge*: received numerous awards that recognize innovation in research, including: (1) "Rising Star" Award from Biomedical Engineering Society, Cellular and Molecular Bioengineering and Advanced Biomanufacturing Joint Divisions, (2) MIT Technology Review Innovator under 35 Award (Turkey), (3) Case School of Engineering Research Award, (4) Doris Duke Innovations in Clinical Research Award, (5) Belcher-Weir Family Pediatric Innovation Award, and (6) Steven Garverick Memorial Innovation Incentive Award.
- *Innovation in teaching and training*: Glennan Fellowship recipient, awarded by The University Center for Innovation in Teaching and Education at CWRU, this prestigious fellowship recognizes teaching and education innovations within or across disciplines, non-traditional educational activities, and curricular and academic program development.
- *Service to the scientific and engineering community*: Publications Chair of the 2016 Summer Biomechanics, Bioengineering & Biotransport Conference, and Editorial Board Member in journals: Scientific Reports (Biological Physics Division), Nanobiomedicine, and Journal of Orthopedics & Rheumatology.

ACADEMIC POSITIONS

- 2015 – **Assistant Professor**
Biomedical Engineering Department (secondary appointment), CWRU, Cleveland, OH
- 2014 – **Core Investigator**
Advanced Platform Technology Center, Louis Stokes Cleveland Veterans Affairs Medical Center, Cleveland, OH
- 2013 – **Assistant Professor**
Orthopaedics Department (secondary appointment), CWRU, Cleveland, OH
- 2013 – **Assistant Professor**
Mechanical and Aerospace Engineering Department (primary appointment, tenure-track), CWRU, Cleveland, OH
- 2010 – 2012 **Postdoctoral Research Fellow**
Harvard-MIT Division of Health Sciences and Technology, Harvard Medical School, Brigham & Women's Hospital, Cambridge, MA
- 2006-2010 **Research Assistant, Teaching Assistant**
Purdue University, Weldon School of Biomedical Engineering, West Lafayette, IN

EDUCATION AND TRAINING

2010 - 2012	Postdoctoral Research Fellow Harvard-MIT Division of Health Sciences and Technology, Harvard Medical School, Brigham & Women's Hospital, Cambridge, MA
2010	Ph.D. in Biomedical Engineering Purdue University, Weldon School of Biomedical Engineering, West Lafayette, IN
2005	B.S. in Mechanical Engineering, High Honor (Summa cum Laude) Middle East Technical University, Turkey
2004	B.S. in Chemical Engineering, High Honor (Summa cum Laude) Middle East Technical University, Turkey

AWARDS AND HONORS

2016	Faculty Early Career Development (CAREER) Award, National Science Foundation (NSF)
2016	"Rising Star" Award, Biomedical Engineering Society – Cellular and Molecular Bioengineering and Advanced Biomanufacturing Divisions
2015	Glennan Fellowship, University Center for Innovation in Teaching and Education
2014	MIT Technology Review Innovator under 35 Award – Turkey
2014	Case School of Engineering Research Award
2014	Case-Coulter Translational Research Partnership Award
2014	Clinical and Translational Science Collaborative Annual Pilot Award
2014	NASA Tech Briefs' Create the Future Design Contest, First Prize Winner in Medical Category
2013	Doris Duke Innovations in Clinical Research Award
2013	Belcher-Weir Family Pediatric Innovation Award
2013	Steven Garverick Memorial Innovation Incentive Award
2011	Wyss Award for Translational Research, IEEE-Engineering in Medicine and Biology Society
2011	Partners in Excellence Award for Outstanding Community Contributions
2009	Geddes-Laufman-Greatbatch Outstanding Graduate Student Award, Purdue University
2009	Top Dissertation Proposal Award, Weldon School of Biomedical Engineering, Purdue University
2009	Graduate Teacher Certificate, Purdue University Center for Instructional Excellence
2009	A. H. Ismail Interdisciplinary Program Doctoral Research Travel Award, Purdue University
2009	Joe Bourland Graduate Student Travel Award, Purdue University
2008	Purdue Graduate Student Government Travel Grant
1999 – 2004	Sabancı Foundation Undergraduate Scholarship

CURRICULUM DEVELOPMENT AND TEACHING

Case Western Reserve University Courses Taught

2013 Fall	EMAE 456: Micro-Electro-Mechanical Systems in Biology and Medicine (BioMEMS) (10 students)
2014 Spring	EMAE 370: Design of Mechanical Elements (87 students, 4 TAs)
2014 Fall	EMAE 456: Micro-Electro-Mechanical Systems in Biology and Medicine (BioMEMS) (8 students)
2015 Spring	EMAE 370: Design of Mechanical Elements (115 students, 4 TAs)
2015 Fall	EMAE 456: Micro-Electro-Mechanical Systems in Biology and Medicine (BioMEMS) (online course)
2016 Spring	EMAE 370: Design of Mechanical Elements (117 students, 4 TAs)
2016 Fall	EMAE 456: Micro-Electro-Mechanical Systems and Biomanufacturing (online course, 15 students)
2016 Fall	EMAE 397: Independent Laboratory Research, Biomedical Micro-Electro-Mechanical Systems (BioMEMS) for Cleveland Institute of Art Students (5 students)
2017 Spring	EMAE 370: Design of Mechanical Elements (122 students, 5 TAs)

Other Teaching, Mentorship, and Outreach Activities

- 2016 - Science Technology and Art (STArt) Program, Biomedical Micro-Electro-Mechanical Systems (BioMEMS) for Cleveland Institute of Art Students: Cleveland IA's biomedical art program involves the use of media art to focus on the visual arts of human anatomy, traditional surgical methods, and basic histology. In this course, we aim to expand Cleveland IA's biomedical art education to include emerging microtechnologies in biology and medicine. Biological microsystems and their working principles involve a deeper understanding of cell mechanics and the interactions of cells, proteins and alike biological entities. When introducing these systems to a wide audience ranging from the lay person to the expert, illustrations at the microscale should pay attention to concise representation of the system or phenomenon, technical and scientific correctness, visual engagement, and memorable exemplification. Therefore, artists would benefit from an understanding of molecular, cellular and tissue level intricacies and behavior of cells and proteins in physiological conditions, which is the focus of this course.
- 2015 - 2016 Glennan Fellowship: I was awarded the Glennan Fellowship by The University Center for Innovation in Teaching and Education (May 2015). Named after T. Keith Glennan, former President of Case Institute of Technology (1947-1965), the Glennan Fellowship program facilitates faculty growth. Glennan Fellowship is awarded based on promise for a balanced career in both teaching and scholarship. The fellowship project is titled: "Teaching Critical Reading and Writing in Emerging Science and Technology Fields".
- 2014 Summer Proposal Writing and Project Management Workshop: Scientific and Technological Research Council of Turkey, Lecturer and organizer of multiple sessions, panels and workshops
- 2010-2012 Student Success Jobs Program (SSJP) Mentor, Brigham and Women's Hospital, Harvard Medical School: BWH-SSJP is an intensive year-round employment and mentoring program for students of Boston high schools. This program introduces high school students in the 10th -12th grades from the city's lowest income communities to careers in health, science and medicine by offering paid internships in research laboratories.

Teaching at Purdue University

- Summer 2008, 2009 Purdue Summer Undergraduate Research Fellowship Program
- Fall 2007, 2008 Scanning Electron Microscopy Laboratory course (HORT 595B), Graduate Level, Purdue University Life Sciences Microscopy Facility, instructed 12 graduate students on the use of SEM for biological imaging, performed oral examination with weekly homework.

Teaching Assistantship

- Spring 2006, 2007 Biomechanics of Hard and Soft Tissues course (BME204), Sophomore Level, Purdue University
- 2000 – 2004 Student Assistant for Computer Education on University Campus, Middle East Technical University Computer Center

RESEARCH MENTEES AND STUDENTS AT CWRU

Research Advisor of Post-Doctoral Research Associates

- Ping He, MD, PhD, Sr. Research Associate, Lab Manager (2014 - 2015)
- Arwa Fraiwan, PhD, Post-doctoral Research Associate (2016 -)

Research Advisor of Research Assistants

- Ceonne Kim, Clinical Research Assistant, (2014 - 2015)
- Anima Adhikari, Clinical Research Assistant, (2015 - 2016)
- Charlotte Yuan, Clinical Research Assistant, (2016 -)
- Erina Quinn, Clinical Research Assistant, (2017-)

Research Advisor of Visiting Scholars

- Bimur Akkaya, PhD, Associate Professor (Cumhuriyet University, Turkey), Visiting Scholar, TUBITAK Fellowship, (2016 -)

Research Advisor of PhD Students

- Yunus Alapan, PhD, (2013 – 2016), Dissertation: "*Microfabricated Systems Integrated with Biomolecular Probes for Cell Mechanics*"; Current Position: Postdoc at Max Planck Institute for Intelligent Systems, Humboldt Fellow
- Muhammad Noman Hasan, PhD Student, (2014 -)

Erdem Kucukal, PhD Student, (2015 -)

Yuncheng Man, PhD Student, (2016 -)

Research Advisor of MS Students

Myeongseop (James) Kim, MS Student, (2014 - 2016), Thesis: *"Micro-Gas Exchanger for Oxygen Tension Control in Biological Microfluidic Systems"*; Current Position: Researcher at Agency for Defense Development in South Korea

Ryan Ung, MS Student, (2014 - 2016), Thesis: *"The Design, Fabrication, and Testing of a Point of Care Device for Diagnosing Sickle Cell Disease and Other Hemoglobin Disorders"*; Current Position: Technical Service Engineer at Epic

Mark Lewandowski, BS/MS Student (2015 -)

Committee Member of Graduate Students

Julia Elizabeth Samorezov, 2015, PhD, Biomedical Engineering, *"Hydrogels with Controlled Physical and Biochemical Properties to Direct Cell Behavior for Applications in Bone Tissue Engineering"*

Mehran Bakshiani, 2015, PhD, Electrical Engineering, *"A Self-Sustained Miniaturized Microfluidic-CMOS Platform for Broadband Dielectric Spectroscopy"*

Chen-Yuan Chung, 2015, PhD, Mechanical Engineering, *"Evaluation of the Mechanical Behavior and Material Properties of Native and Tissue-engineered Cartilage Using Finite Element Analysis and Ultrasonic Elastography Measurement"*

Xinyang Liu, 2016, MS, Mechanical Engineering, *"A Monolithic Lagrangian Meshfree Method for Fluid-Structure Interaction"*

Bolan Li, 2016, PhD, Mechanical Engineering, *"Raman Spectroscopic Analysis of Crystals in Synovial Fluid"*

Research Advisor of Undergraduate Students

Tolulope Rosanwo (MD student) (2015 -)

Yumi Matsuyama (2014 - 2016)

Megan Romelfanger (2014 - 2016)

Collin Krebs (2014 - 2015)

Kayla Gray (2013 - 2014)

Rishe Sivagnanam (2014)

David Lin (2014)

Richang Shen (2014)

Alexander Weber (2013)

Paul Blumenkopf (2013)

Zhenni Zhang (2013)

Advisor of Cleveland Institute of Art Students

Grace Gongaware, Scientific Art Intern (2015 -)

Courtney Fleming, Scientific Art Intern (2016 -)

Research Advisor of High School Students

Asya Akkus, Laurel School, (2014 -)

James Forsythe, Gilmore Academy Catalyst Program, (2014)

Bjoern Kluwe, Hawken School, (2014)

Ozan Ergungor, Hawken School, (2014)

CURRENT AND RECENT ACADEMIC COLLABORATORS

Jane A. Little, MD, Associate Professor, Hematology, Director of Adult Sickle Cell Anemia Center, CWRU

Connie Piccone, MD, Assistant Professor, Pediatric Hematology

Evi Stavrou, MD, Assistant Professor, Hematology, CWRU, Louis Stokes Cleveland Veterans Affairs Medical Center

Glenn Wera, MD, Orthopaedic Surgery Chief, Louis Stokes Cleveland Veterans Affairs Medical Center, CWRU

Bo Li, PhD, Assistant Professor, Mechanical and Aerospace Engineering Department, CWRU

Ozan Akkus, PhD, Professor, Mechanical and Aerospace Engineering Department, CWRU

Jai Kadambi, PhD, Professor, Mechanical and Aerospace Engineering Department, CWRU
 Pedram Mohseni, PhD, Associate Professor, CWRU BioMicroSystems Laboratory
 Michael Suster, PhD, Research Associate, CWRU BioMicroSystems Laboratory
 Giuseppe Strangi, PhD, Professor, Physics, CWRU
 Hillel Chiel, PhD, Professor, Biology, CWRU
 Arne Rietsch, PhD, Associate Professor, Molecular Biology and Microbiology, CWRU
 Brian Cunningham, PhD, Professor, Electrical and Computer Engineering University of Illinois at Urbana-Champaign
 Nigel Key, MB ChB FRCP, Harold R. Roberts Distinguished Professor of Medicine and Pathology, and the Director of the UNC Hemophilia and Thrombosis Center, University of North Carolina at Chapel Hill School of Medicine
 Deepa Manwani, MD, Director of Hematology, and Attending Physician, Pediatric Hematology/Oncology, The Children's Hospital at Montefiore Associate Professor of Clinical Pediatrics, Albert Einstein College of Medicine

UNIVERSITY SERVICE

2013 – 2015 Chair, CWRU Mechanical and Aerospace Engineering Research Seminar Series Committee
 2014 – 2015 Member, CWRU Mechanical and Aerospace Engineering Undergraduate Committee
 2014 – 2015 Member, CWRU Case School of Engineering Research Committee
 2014 Member, CWRU EECS Faculty Search Committee (Area: Circuits, Chair: Pedram Mohseni)
 2015 – Member, CWRU Faculty Senate Committee on Graduate Studies
 2015 – Member, CWRU Mechanical and Aerospace Engineering Graduate Committee
 2016 Member, CWRU Strategic Research Committee (Goal 2: Bring Discoveries to Society)
 2016 – Member, CWRU Case School of Engineering Graduate Committee

PROFESSIONAL ACTIVITIES AND LEADERSHIP

2016 Publications Chair, Summer Biomechanics, Bioengineering and Biotransport Conference (SB³C)
 2014 Organizer, The Scientific and Technological Research Council of Turkey (TUBITAK) Project Development and Proposal Writing Workshop, Antalya International University, Antalya, Turkey, June 16-18, 2014
 2014 Track Organizer, Session Chair, *Manufacturing and Materials for Nanomedicine, Biology, and Nanoengineering*, ASME 2014 3rd Global Congress on NanoEngineering for Medicine and Biology (NEMB2014), February 2-5, 2014, San Francisco, CA
 2013 Session Organizer and Chair, *Biological Sensors and Systems for Diagnostics*, the 35th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'13), July 3-7, 2013, Osaka, Japan
 2007 – 2008 President of the Purdue University Turkish Students Association – elected to represent 100+ Turkish students on Purdue Campus
 2006 – 2007 Secretary of the Purdue University Turkish Students Association Administrative Board

PROFESSIONAL SOCIETY MEMBERSHIPS

American Society of Hematology (ASH)
 American Society of Mechanical Engineers (ASME)
 IEEE Engineering in Medicine and Biology Society (EMBS)
 Biomedical Engineering Society (BMES)
 European Society of Biomechanics (ESB)
 Tissue Engineering and Regenerative Medicine International Society (TERMIS)
 International Society for Biofabrication
 Materials Research Society (MRS)

EDITORIAL ROLE

Editorial Board Member in Biological Physics, Scientific Reports (Nature Publishing Group) (2015 –)
Editorial Board Member, Journal of Orthopedics & Rheumatology (2015 –)
Founding Associate Editor, Nanobiomedicine Journal (2014 –)
Editorial Board Member, Advanced Health Care Technologies (2013 –)
Editorial Board Member, International Journal of Nanomedicine (2012 –)
Guest Editor for Wiley Biotechnology Journal Special Issue on: “Scaffold-free Cell Based Systems: Cell Therapies, Tissue Models, Biosensors” (2011)
Editor, *Volume 2: Applications of Hydrogels in Regenerative Medicine in Gels Handbook*, Tentative publication date: 2014, World Scientific Publishing Company

AD HOC REVIEWER - JOURNALS

ACS Applied Materials & Interfaces
ACS Applied Materials and Interfaces
Advanced Functional Materials
Advanced Healthcare Materials
Advanced Materials
Analyst
Analytical Chemistry
Annals of Biomedical Engineering
ASME Journal of Nanotechnology in Engineering and Medicine
Biomicrofluidics Journal
Biomaterials
Biophysical Journal
Biotechnology Advances
International Journal of Nanomedicine
Journal of Biomechanics
Journal of Medical Devices
Journal of Orthopedic Research
Journal of the Mechanical Behavior of Biomedical Materials
Journal of Visualized Experiments
Microcirculation
Nanobiomedicine
PloS One
Science Advances
Scientific Reports
Sensors
Small
Stem Cells Translational Medicine
Tissue Engineering

AD HOC REVIEWER – RESEARCH PROGRAMS/GRANTS

Department of Defense, U.S. Army Medical Research and Materiel Command, Congressionally Directed Medical Research Programs (CDMRP), Joint Warfighter Medical Research Program (JWMRP)
American Heart Association Bioengineering-Basic Science Peer Review Groups
European Research Council
Horizon 2020, European Union Funding for Research and Innovation
Foundation for Polish Science
City College of New York (CCNY)/Memorial Sloan Kettering Cancer Center Partnership for Cancer Research, Training, and Community Outreach
Oak Ridge Associated Universities (ORAU), Nazarbayev University Research Council in Astana, Kazakhstan

RESEARCH FUNDING

<i>Total research funding secured to date, while at CWRU (Jan 2013-present):</i>	<i>\$3,472,121</i>
<i>Mechanical & Aerospace Engineering and CASE-BML:</i>	<i>\$2,418,916</i>
<i>Sub-contracts and other schools/departments:</i>	<i>\$1,053,205</i>

Active

National Institutes of Health R01

Project Title: Standardized Monitoring of Cellular Adhesion to Improve Clinical Care in Sickle Cell Disease

Grant No: R01HL133574

Role: PI (multi-PI with Jane Little, MD, CWRU, University Hospitals)

Project Period: 7/1/2016 - 6/30/2021

National Science Foundation

Biomechanics and Mechanobiology Program (ENG/CMMI)

Faculty Early Career Development Program Award

Project Title: CAREER: Biomechanics of Red Blood Cell Adhesion and Deformability

Grant No: 1552782

Role: PI

Project Period: 07/01/2016 – 06/30/2021

Doris Duke Charitable Foundation

Innovations in Clinical Research Award

Project Title: 'SCD Biochip': Towards a Simple and Reliable Way to Monitor Sickle Cell Disease

Grant No: 2013126

Role: PI (Co-PI Jane Little, MD, CWRU, University Hospitals)

Project Period: 09/01/2013 – 08/31/2017

NIH Center for Accelerated Innovation at Cleveland Clinic (NCAI-CC)

Technology Development Program

Project Title: HemeChip: Point-of-Care Sickle Cell Disease Diagnosis in Low Resource Settings

Grant No: NCAI-15-4-APP-CWRU-Gurkan

Role: PI

Project Period: 03/01/2016 – 6/30/2017

Center for Integration of Medicine and Innovative Technology (CIMIT)

Student Technology Prize for Primary Healthcare

Project Title: HemeChip: Low-Cost Point-of-Care Screening Platform for Sickle Cell Disease

Role: Faculty Mentor, Co-PI (PI: Yunus Alapan, PhD Candidate in Dr. Gurkan's Lab)

Project Period: 11/01/2015 – 8/31/2017

Ohio Development Services Agency, Ohio Third Frontier

Technology Validation and Start-Up Fund

Project Title: HemeChip for Point-of-Care Diagnosis of Sickle Cell Disease in Newborns

Grant No: ODSA-GR-2016 - 20369

Role: PI

Project Period: 03/01/2016 – 5/31/2017

Case-Coulter Translational Research Partnership

Project Title: HemeChip for Point-of-Care Diagnosis of Sickle Cell Disease and Other Hemoglobin Disorders

Role: PI

Project Period: 03/01/2016 – 05/31/2017

Case-Coulter Translational Research Partnership

Project Title: Point-of-Care Device for Screening and Diagnosis of Oral Cancer

Role: PI

Project Period: 10/31/2016 – 05/31/2017

Completed

Doris Duke Charitable Foundation

2015 Support for Collaborations in Sickle Cell Disease Research

Project Title: Microfluidic Modeling of Sickle Cell Disease

Role: PI (Multi-PI with Nigel Key, MD, University of North Carolina School of Medicine)

Grant No: 2015191

Project Period: 11/01/2015 – 10/31/2016

University Center for Innovation in Teaching and Education

Glennan Fellowship

Project Title: Teaching Critical Reading and Writing in Emerging Science and Technology Fields

Role: PI

Project Period: 07/01/2015 – 06/30/2016

Clinical and Translational Science Collaborative, National Center for Advancing Translational Sciences, National Institutes of Health

Project Title: Hemoglobin Electrophoresis Biochip for Newborns

Grant No: UL1TR000439

Role: PI

Project Period: 06/01/2014 – 05/31/2015

Case-Coulter Translational Research Partnership

Project Title: Hemoglobin Electrophoresis Biochip for Newborns

Role: PI

Project Period: 06/01/2014 – 05/31/2015

Advanced Platform Technology Center, Louis Stokes Cleveland Veterans Affairs Medical Center

Steven Garverick Memorial Innovation Incentive Award

Project Title: Synovial Fluid Biochip for Monitoring Joint and Prosthesis Health

Role: PI

Project Period: 03/01/2014 – 05/31/2015

University Hospitals, Case Medical Center

Belcher-Weir Family Pediatric Innovation Award

Project Title: Functional Complete Blood Count for Children with Sickle Cell Disease via Easy-to-Use Biochip

Role: PI

Project Period: 09/01/2013 – 08/31/2014

PUBLICATION RECORD SUMMARY

Citations: 1796; 'h' index: 26; ([Google Scholar Citations](#))

Peer-reviewed Journal Publications: 57

Peer-reviewed Conference Proceedings (indexed): 15

Book Chapters: 4

Books: 1

Publications in Professional Magazines: 2

Patent Applications: 6

Licensed Patents: 3

Conference Abstracts: 93

PUBLICATIONS (*CWRU mentee co-author is in underlined bold font*)

Peer-reviewed Journal Articles

14 journal articles with CWRU mentees, 28 journal articles while at CWRU, 56 journal articles in total

“**” indicates equal contribution

1. **Krebs J., Y. Alapan,** G. Wera, **U. A. Gurkan,** Microfluidic Processing of Synovial Fluid for Cytological Analysis, *Biomedical Microdevices*, 2017 (accepted)

2. **Kim M., Y. Alapan, A. Adhikari**, J. A. Little, **U. A. Gurkan**, *Hypoxia responsiveness of red blood cell adhesion in microscale flow*, *Microcirculation*, 2017 (accepted)
3. Sreekanth K. V., M. ElKabbash, **Y. Alapan**, E. Ilker, M. Hinczewski, **U. A. Gurkan**, G. Strangi, *Hyperbolic metamaterials-based plasmonic biosensor for fluid biopsy with single molecule sensitivity*, *European Physical Journal Applied Metamaterials*, 2017, 4(1)
4. El Assal R., **U. A. Gurkan**, P. Chen, F. Juillard, A. Tocchio, T. Chinnasamy, C. Beauchemin, S. Unluisler, S. Canikyan, A. Hollman, S. Srivatsa, K. M. Kaye, U. Demirci, *3-D Microwell Array System for Culturing Virus Infected Tumor Cells*, *Scientific Reports*, 2016; 6: 39144
5. **Alapan Y., A. Fraiwan, E. Kucukal, M. N. Hasan, R. Ung, M. Kim**, I. Odame, J. A. Little, **U. A. Gurkan**, *Emerging Point-of-Care Technologies for Sickle Cell Disease Screening and Monitoring*, *Expert Review of Medical Devices*, 2016, 13 (12), 1073-1093 (invited review article)
6. **Alapan Y., C. Kim, A. Adhikari, K. E. Gray**, E. Gurkan-Cavusoglu, J. A. Little, **U. A. Gurkan**, *Sickle cell disease biochip: a functional red blood cell adhesion assay for monitoring sickle cell disease*, *Translational Research*, 2016, 173, 74-91
7. Sreekanth K. V., **Y. Alapan**, M. ElKabbash, A. M. Wen, E. Ilker, M. Hinczewski, **U. A. Gurkan**, N. F. Steinmetz, G. Strangi, *Enhancing the Angular Sensitivity of Plasmonic Sensors Using Hyperbolic Metamaterials*, *Advanced Optical Materials*, 2016, 4(11), 1767-1772 (cover article)
8. **Alapan Y.***, M. Younesi*, O. Akkus, **U. A. Gurkan**, *Anisotropically Stiff 3D Micropillar Niche Induces Extraordinary Cell Alignment and Elongation*, *Advanced Healthcare Materials*, 2016, 5, 1884-1892 (cover article)
9. Sreekanth K. V., **Y. Alapan**, M. ElKabbash, E. Ilker, M. Hinczewski, **U. A. Gurkan**, A. De Luca, G. Strangi, *Extreme sensitivity biosensing platform based on hyperbolic metamaterials*, *Nature Materials*, 2016, 15, 621-627
10. Sreekanth K. V., M. ElKabbash, **Y. Alapan**, A. R Rashed, **U. A. Gurkan**, G. Strangi, *A multiband perfect absorber based on hyperbolic metamaterials*, *Scientific Reports*, 2016, 6:26272
11. **Alapan Y., Y. Matsuyama**, J. A. Little, **U. A. Gurkan**, *Dynamic Deformability of Sickle Red Blood Cells in Microphysiological Flow*, *Technology*, 2016, 4(2), 71-79
12. **Alapan Y.**, K. Icoz, **U. A. Gurkan**, *Micro and Nano devices integrated with biomolecular probes*, *Biotechnology Advances*, 2015, 33(8), 1727-1743
13. **Alapan Y.***, **M. N. Hasan***, **R. Shen**, **U. A. Gurkan**, *Three-Dimensional Printing Based Hybrid Manufacturing of Microfluidic Devices*, *Journal of Nanotechnology in Engineering and Medicine*, 2015, 6(2), 021007
14. Shafiee H., W. Asghar, F. Inci, M. Yuksekkaya, M. Jahangir, M. H. Zhang, N.G. Durmus, **U. A. Gurkan**, D. R. Kuritzkes, U. Demirci, *Paper and Flexible Substrates as Materials for Biosensing Platforms to Detect Multiple Biotargets*, *Scientific Reports*, 2015, 5: 8719
15. Guven S., J. S. Lindsey, I. Poudel I, S. Chinthala, M. D. Nickerson, B. Gerami-Naini, **U. A. Gurkan**, R. M. Anchan, U. Demirci, *Functional Maintenance of Differentiated Embryoid Bodies in Microfluidic Systems: A Platform for Personalized Medicine*, *Stem Cells Translational Medicine*, 2015, 4:1-8
16. **Alapan Y.**, J.A. Little, **U. A. Gurkan**, *Heterogeneous Red Blood Cell Adhesion and Deformability in Sickle Cell Disease*, *Scientific Reports*, 2014, 4 (7173)
17. Unal M.*, **Y. Alapan***, H. Jia, A. G. Varga, K. Angelino, **M. Aslan, I. Sayin**, C. Han, Y. Jiang, Z. Zhang, and **U. A. Gurkan**, *Micro and Nano-scale Technologies for Cell Mechanics*, *Nanobiomedicine*, 2014, 1:5
18. Kilinc, S., **U. A. Gurkan**, S. Guven, G. Koyuncu, S. Tan, C. Karaca, O. Ozdogan, M. Dogan, C. Tugmen, E. E. Pala, U. Bayol, M. Baran, Y. Kurtulmus, I. Pirim, E. Kebapci, and U. Demirci, *Evaluation of Epithelial Chimerism After Bone Marrow Mesenchymal Stromal Cell Infusion in Intestinal Transplant Patients*, *Transplantation Proceedings*, 2014, 46 (6), 2125-2132
19. El Assal R., S. Guven, **U. A. Gurkan**, I. Gozen, H. Shafiee, S. Dalbeyler, N. Abdalla, G. Thomas, W. Fuld, B. M. W. Illigens, J. Estanislau, J. Khoory, R. Kaufman, C. Zylberberg, N. Lindeman, Q. Wen, I. Ghiran, U. Demirci, *Bio-Inspired Cryo-Ink Preserves Red Blood Cell Phenotype and Function During Nanoliter Vitrification*, *Advanced Materials*, 2014, 26 (33), 5815-5822
20. **Gurkan U. A.**, R. El Assal, S. E. Yildiz, Y. Sung, A. J. Trachtenberg, W. P. Kuo, U. Demirci, *Engineering anisotropic biomimetic fibrocartilage microenvironment by bioprinting mesenchymal stem cells in nanoliter gel droplets*, *Molecular Pharmaceutics*, 2014, 11 (7), pp 2151–2159

21. Wang S., S. Tasoglu, P. Z. Chen, M. Chen, R. Akbas, S. Wach, C. I. Ozdemir, **U. A. Gurkan**, F. F. Giguel, D. R. Kuritzkes, U. Demirci, *Micro-a-fluidics ELISA for Rapid CD4 Cell Count at the Point-of-Care*, Scientific Reports, 2014, 4, 3796
22. Akkaynak D., T. Treibitz, B. Xiao, **U. A. Gurkan**, J. Allen, U. Demirci, and R. Hanlon, *Use of commercial off-the-shelf (COTS) digital cameras for scientific data acquisition and scene-specific color calibration*, Journal of the Optical Society of America A, 2014, 31(2) 312-321
23. Tasoglu S., **U. A. Gurkan**, S. Wang, and U. Demirci, *Manipulating biological agents and cells in microscale volumes for applications in medicine*, Chemical Society Reviews, 2013, 42(13), 5788-5808
24. Rizvi I., **U. A. Gurkan**, S. Tasoglu, N. Alagic, J.P. Celli, L. B. Mensah, Z. Mai, U. Demirci, T. Hasan. *Flow induces epithelial-mesenchymal transition, cellular heterogeneity and biomarker modulation in 3D ovarian cancer nodules*. Proceedings of the National Academy of Sciences, 2013, 110 (22), E1974-E1983
25. **Gurkan U. A.**, Y. Fan, F. Xu, B. Erkmen, E. S. Urkac, G. Parlakgul, J. Bernstein, W. Xing, E. S. Boyden, and U. Demirci, *Simple precision creation of digitally specified, spatially heterogeneous, engineered tissue architectures*, Advanced Materials, 2013, 25, 1192-1198 (*Highlighted in MIT News, Wired News, Science Daily, and other news agencies around the world: "Precisely engineering 3-D brain tissues"*)
26. Inci F.*, O. Tokel*, S. Wang, **U. A. Gurkan**, S. Tasoglu, D. R. Kuritzkes, and U. Demirci, *Nanoplasmonic quantitative detection of intact viruses from unprocessed whole blood*, ACS Nano, 2013, 7 (6), 4733-4745
27. Tasoglu, S., H. Safaee, X. Zhang, J. L. Kingsley, P. N. Catalano, **U. A. Gurkan**, A. Nureddin, E. Kayaalp, R.M. Anchan, R. L. Maas, E. Tüzel, U. Demirci, *Microfluidic Sorting: Exhaustion of Racing Sperm in Nature-Mimicking Microfluidic Channels During Sorting*, Small, 2013, 9(20), 3366
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40. El Assal R., Guven S., **Gurkan U. A.**, Gozen I., Shafiee H., Dalbeyber S., Abdalla N., Thomas G., Fuld W., Illigens B., Estanislau J., Khoory J., Kaufman R., Zylberberg C., Lindeman N., Wen Q., Ghiran I., Demirci U., *Cryo-printing Ectoine-Assisted Preservation of Red Blood Cells*. Military Health System Research Symposium, August 18-21, 2014, Ft. Lauderdale, FL, USA

41. **Gurkan U. A.**, B. Erkmen, E. S. Urkac, J. Bernstein, E. S. Boyden, U. Demirci, *Microfabrication of Digitally Specified, Spatially Heterogeneous, Engineered Tissue Architectures*, The European Chapter Meeting of the Tissue Engineering and Regenerative Medicine International Society (TERMIS-EU 2013), June 2013, Istanbul, Turkey
42. Kilinc S., **U. A. Gurkan**, G. Koyuncu, M. Dogan, C. Tugmen, E. Kebapci, C. Karaca, S. Tan, E. E. Pala, U. Bayol, M. Baran, Y. Kurtulmus, I. Pirim, S. Guven, U. Demirci, *Bone Marrow Mesenchymal Stem Cell Infusion in Intestinal Transplant Patients with Short Bowel Syndrome*, The European Chapter Meeting of the Tissue Engineering and Regenerative Medicine International Society (TERMIS-EU 2013), June 2013, Istanbul, Turkey
43. **Gurkan U. A.**, Selective capture and on-demand local release of rare cells in stimuli-responsive microfluidic channels, NIH Annual Single Cell Analysis Investigators Meeting, April 2013, Bethesda, MD
44. **Gurkan U. A.**, V. Giannakeas, D. Akkaynak, T. Moore, C. Brenan, A. Eryilmaz, E. Topsakal, D. R. Kuritzkes, L-L. Hsiao, J. V. Bonventre, J. K. Tucker, U. Demirci, *Homecare Portal for Peritoneal Dialysis Therapy Monitoring and Management*, ASME 2nd Global Congress on NanoEngineering for Medicine & Biology, Boston, MA (2013) (Highlighted by Reuters on February 11, 2013: "Disposable chip could find infections in home peritoneal dialysis")
45. **Gurkan U. A.**, K. Sekeroglu, M. Demirel, U. Demirci, *Transport of Microscale Hydrogels on a Nanoscale Ratchet*, ASME 2nd Global Congress on NanoEngineering for Medicine & Biology, Boston, MA (2013)
46. **Gurkan U. A.**, S. Tasoglu, D. Akkaynak, O. Avci, S. Unluisler, S. Canikyan, N. MacCallum, U. Demirci, *Stimuli-responsive Microfluidics for On-demand Local Cell Capture and Release*, ASME 2nd Global Congress on NanoEngineering for Medicine & Biology, Boston, MA (2013)
47. Inci F., S. Wang, **U. A. Gurkan**, D. R. Kuritzkes, U. Demirci. *Nanoplasmonic Biosensing Platform for Multiple Pathogen Detection*, Transducers 2013 & Eurosensors XXVII: the 17th International Conference on Solid-State Sensors, Actuators and Microsystems, Barcelona, Spain (2013)
48. **Gurkan U. A.**, H. Tas, T. Anand, and U. Demirci, *Label-free and Viable Stem Cell Isolation from Peripheral Blood with a Thermoresponsive Microfluidic Chip*, MRS 2012 Spring Meeting, April 9-13, 2012, San Francisco, CA
49. **Gurkan U. A.**, R. E. Assal, Y. Sung, F. Xu, Demirci U., *Microdroplet-Based Hydrogel Printing for Engineering Anisotropic Stem Cell Microenvironment*, 9th World Biomaterials Congress (WBC), June 1-5, 2012, Chengdu, China
50. **Gurkan U. A.**, Tasoglu S., Akkaynak D., Avci O., Unluisler S., Canikyan S., MacCallum N., Demirci U., *Stimuli-responsive microfluidics for on-demand local cell capture and release*, Materials Research Society Fall Meeting, Boston, MA, USA (2012).
51. **Gurkan U. A.**, Sekeroglu K., Demirci U., Demirel MC., *Transport of microscale hydrogels on a nanoscale ratchet*, Materials Research Society Fall Meeting, Boston, MA, USA (2012).
52. **Gurkan U. A.**, Sung Y., El Assal R., Xu F., Trachtenberg A., Kuo W., Demirci U. *Bioprinting anisotropic stem cell microenvironment*. 3rd Tissue Engineering and Regenerative Medicine, Vienna, Austria (2012).
53. Rizvi I., S. Anbil, J. P. Celli, N. Alagic, **U. A. Gurkan**, S. Tasoglu, S. A. Elrington, U. Demirci and T. Hasan, *A 3D Platform for Micrometastatic Ovarian Cancer to Evaluate Therapeutic Parameters and Model Determinants of Tumor Growth*, SPIE-BIOS Photonics West 2012, 21 - 26 January 2012, San Francisco, California, USA
54. Tasoglu S., Kavaz D., **Gurkan U. A.**, Demirci U., *Magnetic 3D assembly of microgels for tissue engineering and regenerative medicine*. 3rd Tissue Engineering and Regenerative Medicine, Vienna, Austria (2012).
55. Inci F., Kavaz D., **Gurkan U. A.**, Xu F., Mullick O., Sung Y., Baoqiang L., Demirci U., *Mechanical characteristics and release properties of magnetic nanoparticle encapsulating biodegradable hydrogels*, 3rd Tissue Engineering and Regenerative Medicine, Vienna, Austria (2012).
56. Inci F., Wang S., **Gurkan U. A.**, Kuritzkes DR., Demirci U. *Surface Plasmon Based Viral Load Microchip for HIV Subtypes using Whole Blood*, Oak Ridge Conference, Oak Ridge, TN, USA (2012).
57. Sokullu-Urkac E., **Gurkan U.A.**, Demirci U., *Plasma Treatment on 3D Cell Culture Environment*, 22nd International Conference on the Application of Accelerators in Research and Industry (CAARI-2012), Fort Worth, Texas, (2012)
58. **Gurkan U. A.**, S. Moon, J. Blander, W. Fawzi, S. Aboud, F. Mugusi, D. Kuritzkes, and U. Demirci, *A label-free CD4+ T-lymphocyte counting microfluidic chip for portable point of care testing*, Annual meeting of Biomedical Engineering Society (BMES 2011), October 12-15, 2011, Hartford, Connecticut
59. **Gurkan U. A.**, Sung Y., Xu F., Demirci U., *Engineering of multiphase anisotropic tissue structures by microdroplet hydrogel patterning*, Annual meeting of Biomedical Engineering Society (BMES 2011), October 12-15, 2011, Hartford, Connecticut

60. **Gurkan U. A.**, R. Golden, C. Riley, J. Adamec, and O. Akkus, *Immune and inflammatory pathways are essential for osteogenesis in 3D marrow cultures*, The US National Committee on Biomechanics 3rd Symposium on Frontiers in Biomechanics: Mechanics of Development, June 21, 2011, Farmington, PA
61. **Gurkan U. A.**, O. Akkus and U. Demirci, *Magnetoelastic Radio-Frequency Identification for Biomedical Applications*, National Radio Science Meeting, January 2011, Boulder, CO
62. **Gurkan U. A.**, Xu F., Sung Y., Rengarajan V., Yavuz A. S., Demirci U., *Printing anisotropic cell microenvironment for tissue engineering*, Annual Meeting of the European Chapter of the Tissue Engineering and Regenerative Medicine International Society (TERMIS) 2011, June 7-10, 2011, Granada, Spain
63. **Gurkan U. A.**, F. Xu, Y. Sung, B. Sridharan, A.S. Yavuz and U. Demirci, *Multiphase Anisotropic Tissue Structures by Microdroplet Based Hydrogel Printing*, Materials Research Society Meeting, April 2011, San Francisco, CA
64. **Gurkan U. A.**, H. Tas, T. Anand, and U. Demirci, *Label-free and Viable Stem Cell Isolation from Peripheral Blood with a Disposable Microfluidic Chip*, TERMIS-NA Meeting December 11-14, 2011, Houston, TX
65. **Gurkan U. A.**, Y. Sung, R. E. Assal, and U. Demirci, *Microdroplet-Based Hydrogel Printing for Engineering Anisotropic Stem Cell Microenvironment*, The 2nd Annual Meeting of International Society for Biofabrication, October 6-8, 2011, Toyoma, Japan
66. Zhang X, Khimji I, Shao L., Safaee H., Desai K., Keles H. O., **Gurkan U. A.**, Kayaalp E., Nureddin A., Anchan R.M., Maas R., and Demirci U., *Nanoliter droplet vitrification for cell cryopreservation*, TERMIS-NA Meeting December 11-14, 2011, Houston, TX
67. Sekeroglu K, **U. A. Gurkan**, U. Demirci and M. C. Demirel, *Transport of a soft cargo on a nanoscale ratchet*, MRS Workshop Series › Directed Self-Assembly of Materials, September 28, 2011, Nashville, TN
68. Xu F., **Gurkan U. A.**, Finley T. D., Turkaydin M., Yavuz A. S., Demirci U., *Acoustic Directed Microparticle Assembly for Biomedical Applications*, Annual Meeting of the European Chapter of the Tissue Engineering and Regenerative Medicine International Society (TERMIS) 2011, June 7-10, 2011, Granada, Spain
69. Moon S., **U. A. Gurkan**, D. Kuritzkes, and U. Demirci, *CD4+ T-lymphocyte cell counting using a mobile microchip platform: First results on HIV+ subjects*, American Association for Clinical Chemistry 43rd Oak Ridge Conference: Emerging Technologies for 21st Century Clinical Diagnostics, April 14-15, 2011
70. F. Xu, **Gurkan U. A.**, T. D. Finley, M. Turkaydin, A. S. Yavuz, H. O. Keles and U. Demirci, *Directed Assembly of Microscale Particles by Acoustic Waves for Biomedical Applications*, Society for Biomaterials Annual Meeting, April 2011, Orlando, FL
71. Xu F., **Gurkan U. A.**, Finley T. D., Turkaydin M., Yavuz A. S., Keles H. O. and Demirci U., *Directed Assembly of Microscale Particles by Acoustic Waves for Biomedical Applications*, *Society for Biomaterials Annual Meeting*, April 2011, Orlando, FL
72. Moon S.J., **Gurkan U.A.**, Blander J, Wang S.Q., Eligius L, Fawzi W, Aboud S, Mugusi F, Kuritzkes D, Demirci U., *A Point-of-Care Microchip Platform for HIV-1 Monitoring and Diagnostics*, United States African Command (AFRICOM), Germany, 2011.
73. Wang S. Q., M. Esfahani, **U. A. Gurkan**, D. Kuritzkes, and U. Demirci, *Protein-G based surface chemistry for HIV detection on-chip*, Annual meeting of Biomedical Engineering Society (BMES 2011), October 12-15, 2011, Hartford, Connecticut
74. Wang S. Q., M. Esfahani, B. Cheung, **U. A. Gurkan**, D. Kuritzkes, and U. Demirci, *CD4+ Surface chemistry for detection of HIV in a microfluidic device*, American Association for Clinical Chemistry 43rd Oak Ridge Conference: Emerging Technologies for 21st Century Clinical Diagnostics, April 14-15, 2011
75. Wang S. Q., Esfahani M, **Gurkan U. A.**, Kuritzkes D. Demirci U., *Protein-G based surface chemistry for HIV detection on-chip*, Biomedical Engineering Society Annual Conference. 2011. Hartford, CT, USA. 2011.
76. Wang, S. Q., Moon, S. J., **Gurkan U. A.**, Blander J, Eligius L, Fawzi, W, Aboud, S, Mugusi, F, Kuritzkes, D, Demirci, U, *Microchip based antiretroviral treatment (ART) monitoring of HIV at the point-of-care (POC)*, ATACCC 2011 conference. Fort Lauderdale, FL, USA. 2011.
77. Zhang X, Khimji I, Shao L., Safaee H., Desai K., Keles H. O., **Gurkan U. A.**, Kayaalp E., Nureddin A., Anchan R.M., Maas R., and Demirci U., *Nanoliter droplet vitrification for cell cryopreservation*, SysCODE Consortium 2011, Waltham, MA, USA, April 7, 2011
78. Xu F., Sridharan B., Wang S. Q., **Gurkan U. A.**, Syverud B., Demirci U., *Stem cell printing for controlled-size embryoid body formation*, 2011 MRS Spring Meeting, Moscone West and San Francisco Marriott San Francisco, CA, USA, April 25-29, 2011

79. Xu F., V. Rengarajan, T. D. Finley, Y. Sung, B. Sridharan, **U. A. Gurkan**, U. Demirci, *Magnetic Nanoparticle Based Assembly for Microscale Hydrogels*, Proceedings of the Micro Nano Manufacturing Technologies Workshop 2011, Napa, CA
80. Zhang X, I. Khimji, L. Shao, H. Safaee, K. Desai, H. O. Keles, **U. A. Gurkan**, E. Kayaalp, A. Nureddin, R. M. Anchan, R. L. Maas, U. Demirci, *Nanoliter Droplet System for Cell Vitrification*, Annual meeting of Biomedical Engineering Society (BMES 2011), October 12-15, 2011, Hartford, Connecticut
81. **Gurkan U. A.**, A. Krueger and O. Akkus, The Effect of Mechanical Stimulation on the Production of BMP-2, VEGF, IGF-1 and TGF-b1 by In Vitro Ossifying Rat Bone Marrow Explants, The 17th Congress of the European Society of Biomechanics, Edinburgh, Scotland, July 2010
82. **Gurkan U. A.** and O. Akkus, Temporal Productions of BMP-2, IGF-1, VEGF and TGF-21 Correlate Highly with Each Other in Ossifying Marrow Explants, Orthopedic Research Society 56th Annual Meeting, New Orleans, Louisiana, March 2010
83. **Gurkan U. A.** and O. Akkus, Temporal Production Levels of VEGF and IGF-1 Correlate with the Final Ossified Volume in Inherently Ossifying Marrow Explants In Vitro, Orthopedic Research Society 56th Annual Meeting, New Orleans, Louisiana, March 2010
84. Kishore V., **U.A. Gurkan**, J. A. Uquillas and O. Akkus, *Effects of Cell Type and Fabric Orientation on the Population Rates of Collagen Constructs*, Orthopedic Research Society 56th Annual Meeting, New Orleans, Louisiana, March 2010
85. Xu F., B. Sridharan, S. Wang, N. G. Durmus, **U.A. Gurkan** and Utkan Demirci, *Bacterial Printing for Fabricating Microfluidic Hydrogels*, International Conference on Biofabrication, Philadelphia, Pennsylvania, October 2010
86. **Gurkan U. A.**, X. Cheng, O. Akkus, *Migration of Tendon Derived Fibroblasts and Bone Marrow Stromal Cells on Electrochemically Aligned Collagen Constructs*, The 15th International Biomedical Science and Technology Symposium, Middle East Technical University Northern Cyprus Campus, Turkish Republic of Northern Cyprus, August 2009
87. **Gurkan U. A.**, O. Akkus, *In Vitro Ossifying Bone Marrow Explants Have Osteoinductive Potential via the Media Conditioned By Them*, The 15th International Biomedical Science and Technology Symposium, Middle East Technical University Northern Cyprus Campus, Turkish Republic of Northern Cyprus, August 2009
88. **Gurkan U. A.**, A. Krueger and O. Akkus, *Mechanical Stimulation Enhances the Production of Bmp-2 in Ossifying Rat Bone Marrow Organ Cultures*, ASME Summer Bioengineering Conference, Lake Tahoe , CA, June 2009
89. **Gurkan U. A.** and O. Akkus, *Facilitating the Exodus of Adherent Cells Improves In Vitro Bone Formation in Bone Marrow Explants*, Orthopedic Research Society 55th Annual Meeting, Las Vegas, Nevada, February 2009
90. **Gurkan U. A.** and O. Akkus, *The Osteoinductive Potential of Bone Marrow Conditioned Media is Superior to Dexamethasone and rhBMP-2*, Orthopedic Research Society 55th Annual Meeting, Las Vegas, Nevada, February 2009
91. Meldrum R. D., **U.A. Gurkan**, S. A. Kattaya, O. Akkus, *Staphylococcus Aureus Inhibits the Osteogenesis Induced by Rat Pulmonary Alveolar Macrophages*, Orthopedic Research Society 55th Annual Meeting, Las Vegas, Nevada, February 2009
92. Kishore V., **U.A. Gurkan**, J. A. Uquillas and O. Akkus, Comparison between the Migration Rates of Bone Marrow Stromal Cells and Tendon Derived Fibroblasts on Random and Electrochemically Aligned Collagen Constructs, Society for Biomaterials, Biomaterials Day, Lexington, Kentucky, September 2009
93. **Gurkan U. A.**, X. Cheng, O. Akkus, *Structural Organization and cellular response of electrochemically aligned collagen bundles*, The Seventh Annual Meeting of the Midwest Tissue Engineering Consortium (M-TEC 2008), University of Cincinnati, Cincinnati OH, April 2008
94. Cheng X, **U. A. Gurkan**, O. Akkus, *Feasibility of electrochemically aligned collagen bundles for ligament/tendon tissue engineering*, International Symposium on Ligaments & Tendons - VIII, Stanford University, March 2008
95. Cheng X, **U. A. Gurkan**, O. Akkus, Biomechanical evaluation of a novel electrochemically synthesized collagen constructs for tendon/ligament tissue engineering, 54th Annual Meeting of the Orthopaedic Research Society, San Francisco, CA, March 2008
96. Santoso A., **U. A. Gurkan**, J. Uquillas, O. Akkus, A. Ivanisevic, *Collagen Fiber Orientation and Proteoglycan Influence on Retinal Pigment Epithelial (RPE) Cell Attachment and Morphology*, Biomedical Engineering Society, 2008 Annual Fall Meeting, St. Louis, Missouri

INVITED TALKS

1. Kent State University, Physics Colloquium, March 2017
2. National Institutes of Health, Workshop on New Approaches to the Study of Sickle Erythrocyte Rheology, February 2017
3. 3rd Global Congress on Sickle Cell Disease, Bhubaneswar, Odisha, India, February 2017
4. Case School of Engineering, Materials Science and Engineering Department Seminar Series, February, 2017
5. University of Minnesota Mechanical Engineering Department Seminar Series, January 2017
6. Young Investigator Session, 3rd Biennial Micro and Nanotechnology in Medicine Conference, December 2016, Waikoloa, HI
7. Case Head and Neck Cancer Research Collaborative Retreat, December 2016
8. Case School of Medicine, Department of Pharmacology, Pharmacology Lecture Series, December 2016
9. Biomedical Engineering Society 2016 Annual Meeting, Invited panelist and presenter, Engineering Low-Cost Solutions to Address Health Care Disparities, October, 2016
10. Draper Laboratories, Case School of Engineering visit, October 2016
11. Nanoplasm 2016, New Frontiers in Plasmonics and Nano-optics, Cetraro, Italy, June 2016
12. New Jersey Institute of Technology, Biomedical Engineering Department Seminars, February, 2016
13. University of North Carolina at Chapel Hill, Department of Hematology/Oncology, and Joint Department of Biomedical Engineering, UNC and NC State, Coagulation/Thrombosis Seminars, January 20, 2016
14. University of Pittsburgh, Vascular Medicine Institute, Sickle Cell Meeting, November 17, 2015
15. National Institutes of Health, Sickle Cell Branch, November 5, 2015
16. Doris Duke Innovations in Clinical Research Award Sickle Cell Disease Workshop, New York, NY, September 2014
17. University of Vermont Hematology Department, December 18, 2014
18. Case Western Reserve University Chemical Engineering Department Seminar, October 23, 2014
19. Primer Congreso Internacional de Ingeniería Biomédica y Modelización Matemática en Biociencias, Quito, Ecuador, 4 al 6 de junio de 2014
20. Stevens Institute of Technology University Seminar, October 23, 2013, Hoboken, NJ
21. Akdeniz University Seminar, June 17, 2013, Antalya, Turkey
22. OMICS Group International Conference on Tissue Science & Engineering, October 2012, Chicago, IL
23. Illinois Institute of Technology Biomedical Engineering Department, April 12, 2012.
24. Case Western Reserve University, Case School of Engineering, March 26, 2012.
25. Northeastern University Mechanical and Industrial Engineering Colloquium Series, January 27, 2012.
26. Pre-Conference Short Course; Scaffolds: Bridging the Gap between 2D and 3D. CHI's Predictive Functional Human Tissue Models Conference, Predictive Functional Human Tissue Models: Moving into the Third Dimension of Drug Discovery and Development, Omni Parker House, Boston, MA. November 17-18, 2011.
27. Translation of innovation from academia to industry (Panel), The Harvard Catalyst Laboratory for Innovative Translational Technologies (HC-LITT) and the Harvard Catalyst Central Laboratory (HCCL), invited as a panelist, October 13, 2011
28. Quantum Science Symposium 2011, Quantum Science Biology Meeting, Cambridge, MA, September 27, 2011
29. Clemson University, Bioengineering Department (June 13, 2011)
30. University of Massachusetts Lowell, Chemical Engineering Department (May 17, 2011)
31. Koc University, School of Engineering, Istanbul, Turkey (May 3, 2011)
32. Harvard Medical School, BAMM Labs Research Seminar (February 14, 2010)
33. Bilkent University Mechanical Engineering Department Seminar (January 28, 2010)
34. Case Western Reserve University, Biomedical Engineering Research Seminar (December 18, 2009)

35. University of Notre Dame Bioresearch Seminar (November 19, 2009)

SELECTED NEWS ARTICLES AND PRESS RELEASES

1. POCKET PROTECTOR, Developing a Device to Make Life-Saving Blood Screenings Universal, 2016, CWRU Think, <http://case.edu/think/fall2016/blood-screenings.html#.WIThTlMrIak>
2. Researchers build a crawling robot from sea slug parts and a 3-D printed body; Swarms Could One Day Search the Depths of Fresh And Saltwater, July 18, 2016, CWRU Think http://blog.case.edu/think/2016/07/18/researchers_build_a_crawling_robot_from_sea_slug_parts_and_a_3d_printed_body
3. Filling need for fast and accurate assessment of blood's ability to clot; Case Western Reserve University licenses new sensor technology to company pursuing fast-track FDA approval, December 3, 2016, AAAS EurekAlert!, https://www.eurekalert.org/pub_releases/2016-12/cwru-fn120316.php
4. New technology may standardize sickle cell disease screening for infants, UH Case Medical Center experts present new data at Annual Meeting of the American Society of Hematology, December 7, 2015, AAAS EurekAlert!, http://www.eurekalert.org/pub_releases/2015-12/uhcm-ntm120515.php
5. The HemeChip Detects Sickle Cell And Other Blood Diseases In A Flash, May Help Developing Nations, December 7, 2015, Medical Daily, <http://www.medicaldaily.com/hemechip-detects-sickle-cell-and-other-blood-diseases-flash-may-help-developing-364290>
6. "Hemechip" Wins \$150,000 in the 2015 Student Healthcare Technology Prize, Center for Integration of Medicine and Innovative Technology, October 2015, <http://cimit.org/news/student-healthcare-technology-prize091515.html>
7. Sickle cell research using biochip technology advances at University Hospitals, CWRU, December 23, 2014, The Plain Dealer, Cleveland.com, http://www.cleveland.com/healthfit/index.ssf/2014/12/sickle_cell_research_using_biochip_technology_advances_at_university_hospitals_cwru.html
8. 2014 Create the Future Design: Medical Category Winner, HemeChip for Early Diagnosis of Sickle Cell Disease, November 1, 2014, NASA Tech Briefs, <http://www.techbriefs.com/component/content/article/ntb/features/feature-articles/20986>
9. Faculty members Umut Gurkan, Glenn Wera earn innovation award, January 16, 2014; The Daily, <http://thedaily.case.edu/faculty-members-umut-gurkan-glenn-wera-earn-innovation-award/>
10. Researchers learning to predict sickle cell crisis, monitor treatment with award from Doris Duke Foundation, January 2, 2014, The Daily, <http://cwru-daily.com/news/researchers-learning-to-predict-sickle-cell-crisis-monitor-treatment-with-award-from-doris-duke-foundation/>
11. Learning to predict sickle cell crisis and monitor treatment, Doris Duke Foundation funds Case Western Reserve University effort, December 19, 2013, AAAS EurekAlert!, MedicalXpress, Bio-Medicine, http://www.eurekalert.org/pub_releases/2013-12/cwru-ltp121913.php
12. Precisely engineering 3-D brain tissues, New design technique could enable personalized medicine, studies of brain wiring, November 30, 2012, MIT News, <http://news.mit.edu/2012/precisely-engineering-3d-brain-tissues-1130>
13. News From the Field, Precisely Engineering 3-D Brain Tissues, November 29, 2012, National Science Foundation, https://www.nsf.gov/news/news_summ.jsp?cntn_id=126236

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