

Hasan Erbil Abaci, Ph.D.

1) Date of preparation of CV: 4/27/2023

2) Personal Data:

- **Name:** Hasan Erbil Abaci
- **Address:** Columbia University Medical Center, Department of Dermatology, Russ Berrie Medical Science Pavilion, 1150 St. Nicholas Avenue, Room 302, New York, New York 10032 USA
- **E-mail:** hea2113@cumc.columbia.edu

3) Academic Appointments and Other Work Experience:

- **Tenure-Track Assistant Professor — Department of Dermatology** 2018- Present
Columbia University Medical Center, New York, NY
- **Postdoctoral Research Scientist — Dr. Angela Christiano's Lab** 2014 - 2018
Columbia University Medical Center, Department of Dermatology, New York, NY
- **Postdoctoral Fellow — Dr. Michael L. Shuler's Lab** 2013 - 2014
Cornell University, Biomedical Engineering, Ithaca, NY
- **Graduate Researcher — Dr. Sharon Gerecht's Lab** 2009 - 2013
Johns Hopkins University, Baltimore, MD
- **Teaching Assistant — Chemical and Biomolecular Engineering Department** 2010 - 2013
Johns Hopkins University, Baltimore, MD

4) Education:

- **Ph.D. Johns Hopkins University, Whiting School of Engineering** 2008 - 2014
Chemical and Biomolecular Engineering Department
Advisor: Dr. Sharon Gerecht
- **M.Sc. Izmir Institute of Technology** 2006 - 2008
Chemical Engineering Department
Advisor: Dr. Sacide Alsoy Altinkaya
- **B.Sc. Izmir Institute of Technology** 2002 - 2006
Chemical Engineering Department

5) Training:

- **Columbia University Medical Center, New York, NY** 2014 – 2017
Postdoctoral Research Scientist in Dr. Angela Christiano's Lab
- **Cornell University, Biomedical Engineering, Ithaca, NY** 2013 – 2014
Postdoctoral Fellow in Dr. Michael Shuler's Lab
- **Johns Hopkins University, Baltimore, MD** 2009 – 2013
Graduate Research Assistant at Chemical and Biomolecular Engineering Department

6) Honors and Awards:

- **K01 Award, NIH/ NIAMS, (2017)**

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- **SID/Paul R. Bergstresser Travel Award**, 75th Society of Investigative Dermatology Conference, (2016)
- **Mandl Connective Tissue Research Fellowship**, Columbia University Medical Center, (2016)
- **International Travel Award**, 4th Tissue Engineering Conference – Aegean Conferences, (2011)
- **Teaching and Research Assistantship**, Johns Hopkins University, (2009)
- **Scholarship from Turkish Ministry of Education for Ph.D. studies in the U.S.** (2008- 2009)
- **Best Project Award in Engineering Economics and Design**, Izmir Institute of Technology, (2006)

7) Administrative Leadership and Academic Service:

Academic Service

- **Grant reviewer** for the National Science Foundation (NSF), Engineering of Biomedical Systems Panel.
- **Grant reviewer** for the Department of Defense (DoD), FY22 Combat Readiness Medical Research Program (CRRP) Wound Care Solutions (WCS) to review applications of Rapid Development and Translational Research Award.
- **Grant reviewer** for the DoD, FY21 Congressionally Directed Medical Research Program (CDMRP), to review the pre-applications of Investigator-Initiated Research Awards.
- **Grant reviewer** for the of DoD, FY20 CDMRP to review full applications of Discovery Awards.
- **Invited participant in the NIH early career reviewer (ECR) program** to serve in the study sections Arthritis, Connective Tissue and Skin (ACTS) and Musculoskeletal Tissue Engineering (MTE).
- **Grant Reviewer** in the ACTS study section at NIH for R01 and R21 grants in 2021.
- **International grant reviewer** invited by the National Science Center, Poland, 2020.
- **International grant reviewer** invited by the Swiss National Science Foundation, 2020.
- **Reviewer** for 2019-2020 Graduate Women in Science (GWIS) National Fellowship competition.

Administrative Leadership at CUIMC and NYP

- Coordinator of Basic Science speakers for the monthly Grand Rounds at the Department of Dermatology. (2020-present)
- Voting member of the Faculty Council (2021-present)
- Organizer of the Journal Club for Dermatology Residents (2021-present)

Meeting Organization and Chairing

- **Chair** of Skin Tissue Engineering Thematic Working Interest Group (TWIG) at the Tissue Engineering and Regenerative Medicine International Society (TERMIS) (2022-present).
- **Chair and moderator** of the Skin, Wound Healing and Inflammation sessions at the TERMIS- Americas Chapter Meeting 2023 in Boston.

8) Professional Organizations and Societies:

Memberships and Positions

- Tissue Engineering and Regenerative Medicine International Society (2021-Present)

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- Society of Investigative Dermatology (2014-Present)
- American Heart Association (2009-2011)

Editorial

- Associate Editor of the journal *Frontiers in Dermatological Research* (Molecular and Cellular Dermatology section).
- Editorial Board Member of the journal *Biomicrofluidics*.
- Guest Editor of the journal *Biomicrofluidics* for the Special Issue: Organ-specific vasculature-on-a-chip systems (to appear in 2023)

Journal Reviewer

Regular reviewer for journals including:

- Nature Communications
- Science Advances
- Lab-on-a-Chip
- Advanced Materials
- Advanced Healthcare Materials
- Biomicrofluidics
- Translational Medicine, Stem Cell Reviews and Reports
- Scientific Reports

9) Fellowship and Grant Support

Active Research Funding

- **Investigator Initiated Research Award (\$2,026,487)** **Abaci (PI)** 2023 – 2027
Department of Defense
Title: Biofabricated patient-specific skin gloves as a personalized therapy for mitten deformities in epidermolysis bullosa
- **National Science Foundation Grant (\$503,973)** **Abaci (Co-PI)** **Uz (Co-PI)** 2023 – 2026
CBET (unsolicited)
Title: Restoring the Mechanosensation in Engineered Skin using Controllable Cellular and Extracellular Cues
- **R21-Trailblazer Grant (\$648,000)** **Abaci (PI)** Sep 2020- May 2024
NIH/National Institute of Biomedical Imaging and Bioengineering (NIBIB)
Title: Generating Morphogen Gradients to Engineer Human Integumentary Organoids
- **K01 Grant (\$525,000)** **Abaci (PI)** Sep 2019- May 2023
NIH/National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)
Title: Synthetic Developmental Tissue Engineering of Human Hair Follicles (Co-mentored by Dr. Christiano and Dr. Vunjak-Novakovic)
- **U18 Grant (\$1,200,000)** **Christiano (PI)** **Abaci (Co-Investigator)** Sep 2020-Aug 2023
NIH/National Center for Advancing Translational Sciences (NCATS)
Title: Drug Screening with a Biofabricated 3-D Immunocompetent Skin Model for Drug Discovery in Psoriatic Disease
- **UG3 Grant (\$3,125,000)** **Christiano (PI)** **Abaci (Co-Investigator)** Sep 2022-Aug 2024

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NIH/National Institute on Aging (NIA)

Title: Senescence-on-a-chip: Building a microphysiological 3D skin model

Past Support

- **Mandl Connective Tissue Grant (\$100,000)** **Abaci (PI)** 2019 - 2021
Ines Mandl Research Foundation
Title: Identifying skin-specific vasculature profile using biomimetic skin models
- **Mandl Connective Tissue Fellowship (\$50,000)** **Abaci (PI)** 2017 - 2018
Ines Mandl Research Foundation
Title: Generation of Functional Human Hair
- **UH3 Grant (\$1,500,000)** **Vunjak-Novakovic (PI)** **Abaci (co-investigator)** 2017 – 2022
NIH/National Center for Advancing Translational Sciences (NCATS)
Title: Multi-Tissue Platform for Modelling Systemic Pathologies
- **UG3 Grant (\$500,000)** **Christiano (PI)** **Abaci (co-investigator)** 2020 – 2021
NIH/National Center for Advancing Translational Sciences (NCATS)
Title: Clinical Trials in a Dish using a Personalized Multi-Tissue Platform for Atopic Dermatitis

10) Educational Contributions

Direct Teaching/Precepting/Supervising

Teaching Assistant for “Chemical and Biomolecular Product and Process Design” course at Johns Hopkins University: 2011-2012

- Guided 80 students through poster and oral presentations, project progress reports and group discussions; Graded all assignments, final project reports and group presentations; Worked on data collection and documentation for Accreditation Board for Engineering and Technology.

Invited Guest Lecturer for Three Classes in “Chemical and Biomolecular Product and Process Design” course at Johns Hopkins University. 2011-2012

- Class I: Process Flow Diagrams
- Class II: Process Simulation Softwares
- Class III: Economical Risk Analyses for product design

Invited Guest Lecturer in “Stem Cells in Regenerative Medicine” course at Johns Hopkins University: 2013

- Delivered an hour-long lecture titled: “Microfluidic Platforms for Tissue Engineering” where I covered design, fabrication, handling and application of biomimetic microfluidic platforms

Advising and Mentorship

- **Mentored students during Ph.D. and Postdoctoral Training:**
 - **Quinton Smith** (Summer student at Johns Hopkins, 2011; received his Ph.D. at Johns Hopkins and became an Assistant Professor at UCI);
 - **Rachel Truitt** (B.S. student at Johns Hopkins, 2008-2010; later received her Ph.D. at UPenn);
 - **Scott Tan** (M.Sc. student at Johns Hopkins, 2010-2013);
 - **Rohan Soman** (M.Sc. student at Johns Hopkins, 2011-2013; later received his M.D./Ph.D. student at Cornell University);
 - **Daniel Lewis** (M.Sc. student at Johns Hopkins, 2012-2013; continued as a Ph.D. student at Johns Hopkins University);
- **Mentored Graduate Students and Postdoctoral Trainees (at Columbia):**

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Post-doctoral Researchers/Fellows

- **Dr. Alberto Pappalardo, M.D.** (Postdoctoral Researcher, 2018-Present)
- **Dr. Cristina Quilez Lopez, Ph.D.** (Postdoctoral Fellow, 2023-Present)
- **Dr. Eun Young Jeon, Ph.D.** (Postdoctoral Researcher, 2021-2023; now is a PI in South Korea)

Research Assistants and Technicians

- **Laura Cerda Garriga** (Research Technician, 2023-Present)
- **Abigail Coffman** (Research Technician, 2014-2015; later completed her Ph.D. in City University of New York);
- **Lauren Herron** (Research Technician, 2018-2020; now is a Ph.D. Student in Belgium).

Master Students/Residents

- **Krutav Rakesh Shah, M.S.** (Master Student, Biomedical Engineering, 2023-Present)
- **Zeta Doufexi, M.S.** (Master Student, Biomedical Engineering, 2023-Present)
- **Dr. Amirhosseini Jafariyan, Ph.D.** (Ph.D. thesis defense auxiliary committee member; 2022)
- **Dr. Ha Linh Vu, M.D./Ph.D.** (Dermatology Resident Researcher, 2020-2021)
- **Dr. David Alvarez-Cespedes, M.D. and M.S.** (M.D. student, 2019-2021)
- **Chinyere Denise, M.S.**, (Master Student, Biomedical Engineering, Thesis Advisor, 2021)
- **Mark Nathaniel** (Master Student, Biomedical Engineering, 2021)
- **Leila Sorrells** (Master Student, Biomedical Engineering, 2021)

Undergraduate and Visiting Students/Fellows

- **Logan Whitesel** (Undergraduate Summer Intern; Present)
- **TaQuarus Eberhart** (Undergraduate Summer Intern; EE-Just Scholars Program; Present)
- **Deja Showers** (Undergraduate Summer Intern; EE-Just Scholars Program; Present)
- **Daniel Park** (High School Summer Student; Present)
- **Angela Cirulli**, (Visiting Ph.D. Student from IBEC, Spain, Fall 2022-2023)
- **Pooja Pathak** (Visiting Medical Student from Texas AM, Fall 2022- 2023)
- **Geetika Chanchalani** (High School Student Intern through the Stevens Research Society Program, Summer 2021)
- **Arianna Oddo** (Monash University, Australia; PhD Thesis External Reviewer, 2020)

Community Education or Training

- **Research Mentor for the Ernest E. Just Research Scholars Program** 2023, Summer
The program supports African-American undergraduate students pursuing careers in biomedical and life science research. My lab participates as a host lab for multiple junior and senior students for the summer.
- **Research Advisor for the Stevens Research Society Program** 2021, Summer
The program allows high school students to transform their classroom knowledge into professional scientific experience. My lab participated as a host lab for summer students.
- **Founding member of EPISTEM** 2017 - Present
A non-profit (epistemturkiye.org) organization that has a mission to spread scientific methodology to students in rural and low-income communities in Turkey.
- **The director and supervisor of an EPISTEM project called “Let’s Do an Experiment”** 2017-2020

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Cohorts of high school students are matched with graduate researchers and faculty around the world based on their interests to conduct experiments under the virtual supervision of professional researchers.

11) Patents & Inventions:

- Pending patent titled “Wearable 3D Skin Substitutes and Systems and Methods for Making the Same” (Sep, 2020, Application Number: 63/077,029); Inventors: **H. Erbil Abaci**
- Pending provisional patent application titles “Compositions and Methods for Treating Skin Conditions” (Oct, 2022, U.S. Provisional Application No. 63/256,484); Inventors: Amirhossein Jafariyan, Charles A. Leduc, Alicja Skowronski, **H. Erbil Abaci**, Larisa Geskin, Mead Lockwood, Luke Shaw Nicholson, Virginia Cornish.

12) Publications:

Peer-Reviewed Original Research Articles (**equally contributed; †corresponding author*)

Papers at Columbia University

1. Alberto Pappalardo, David Alvarez-Cespedes, Shuyang Fang, Abigail R. Herschman, Eun Young Jeon, Kristin M. Myers, Jeffrey W. Kysar, and **H. Erbil Abaci**[†]. Engineering edgeless human skin with enhanced biomechanical properties. Science Advances 9 (4) (2023); (highlighted over 40 media outlets worldwide including NIH News in Health, NIH Research Matters and NIH health capsule).
2. Kacey Ronaldson-Bouchard, Diogo Teles, Keith Yeager, Daniel Naveed Tavakol, Yimu Zhao, Alan Chramiec, Somnath Tagore, Max Summers, Sophia Stylianos, Manuel Tamargo, Busub Marcus Lee, Susan P. Halligan, **H. Erbil Abaci**, Zongyou Guo, Joanna Jackow, Alberto Pappalardo, Jerry Shih, Rajesh K. Soni, Shivam Sonar, Carrie German, Angela M. Christiano, Andrea Califano, Karen K. Hirschi, Christopher S. Chen, Andrzej Przekwas and Gordana Vunjak-Novakovic, A multi-organ chip with matured tissue niches linked by vascular flow, Nature Biomedical Engineering 6:351-371 (2022)
3. Zongyou Guo, Chi-Kun Tong, Joanna Jacków, Yanne Doucet, **H. Erbil Abaci**, Wangyong Zeng, Corey Hansen, Ryota Hayashi, Dominick DeLorenzo, Avina Rami, Alberto Pappalardo, Ellen Lumpkin, Angela Christiano. Engineering human skin model innervated with itch sensory neuron-like cells differentiated from induced pluripotent stem cells. Bioengineering & Translational Medicine 10:1038277 (2021).
4. A Pappalardo, L Herron, DE Alvarez Cespedes and **H. Erbil Abaci** [†]. Quantitative evaluation of human umbilical vein and iPSC-derived endothelial cells as an alternative cell source to skin-specific endothelial cells in engineered skin grafts. Advances in Wound Care 10 (9):490-502 (2020).
5. Jung U Shin *, **H. Erbil Abaci** ^{†*}, Lauren Herron, Zongyou Guo, Brigitte Sallee, Yanne Doucet, Eddy Hsi Chun Wang, Joanna Jackow and Angela M. Christiano [†]. Recapitulating T cell infiltration in 3D psoriatic skin models for patient-specific drug testing. Scientific Reports 10 (1):4123 (2020).
6. Joanna Jacków, Zongyou Guo, Corey Hansen, **H. Erbil Abaci**, Yanne S Doucet, Jung U Shin, Ryota Hayashi, Dominick DeLorenzo, Yudai Kabata, Satoru Shinkuma, Julio C Salas-Alanis, Angela M Christiano. CRISPR/Cas9-based targeted genome editing for correction of recessive dystrophic epidermolysis bullosa using iPSC cells. PNAS 116 (52), 26846-26852 (2019).
7. **H. Erbil Abaci**, Abigail Coffman, Yanne Doucet, James Chen, Joanna Jackow, Etienne Wang, Zongyou Guo, and Angela M. Christiano. Tissue engineering of human hair follicles using a novel biomimetic developmental approach, Nature Communications 9 (1): 5301 (2018).
8. Christophe O. Chantre et al. Production-scale fibronectin nanofibers promote wound closure and tissue repair in a dermal mouse model. Biomaterials 166, 96-108 (2018).
9. **H. Erbil Abaci**, Zongyou Guo, Abigail Coffman, Brian Gilette, Wen-han Lee, Samuel K. Sia, and Angela M. Christiano. Human skin constructs with spatially-controlled vasculature using primary and iPSC-derived endothelial cells. Advanced Healthcare Materials 5 (14), 1800-1807 (2016).

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Manuscripts in Preparation

1. Eun Young Jeon, Cristina Quilez Lopez, Alberto Pappalardo, Leila Sorrells, Pooja Pathak, and **H. Erbil Abaci**[†]. Spatially-controlled skin morphogenesis using chemically-defined extracellular matrix cues (2023; in preparation).
2. Leila Sorrells, Alberto Pappalardo, David Alvarez-Cesperez, Eun Young Jeon, and **H. Erbil Abaci**[†]. A biopsy-sized 3D model of skin vascular plexus and appendages enables monitoring T cell trafficking (2023; in preparation).
3. A. Jafariyan, A. Skowronski, C. A. LeDuc, A. Pappalardo, **H. Erbil Abaci**, R. Leibel, V. W. Cornish. Live yeast dressings engineered via synthetic biology to deliver protein factors to diabetic wounds (2023; in preparation).

Papers Previous to Columbia University

1. Ying I. Wang, **H. Erbil Abaci**, and Michael L. Shuler. Microfluidic blood-brain-barrier model provides in vivo-like barrier properties for drug permeability screening. *Biotechnology and Bioengineering* 114 (1):184-194 (2016).
2. Daniel Lewis, **H. Erbil Abaci**, and Sharon Gerecht. Microfluidic model of endothelial progenitor cell recruitment in wound healing. *Biofabrication* 7 (4):383-391 (2015)
3. **H. Erbil Abaci**, and Michael L. Shuler. Human-on-a-chip design strategies and principles for PBPK/PD modeling. *Integrative Biology* 7:389-391 (2015, *Critical Review*) – Selected as the Hot Article of the Month and Journal Inside Cover.
4. **H. Erbil Abaci**, Karl Gledhill, Zongyou Guo, Angela M. Christiano, and Michael L. Shuler. Pumpless microfluidic platform for long-term drug testing on human skin equivalents. *Lab on a chip* 15(3):882-888 (2015).
5. **H. Erbil Abaci**, Yu-I Shen, Scott Tan, and Sharon Gerecht. Recapitulating physiological and pathophysiological shear stress and oxygen to model vasculature in health and disease. *Scientific Reports* 4 (1):1-9 (2014).
6. Yu-I Shen, **H. Erbil Abaci**, Yoni Krupsi, Lien-Chun Weng, Jason A. Burdick and Sharon Gerecht. Hyaluronic acid hydrogel stiffness and oxygen tension affect cancer cell fate and endothelial sprouting. *Biomaterials Science* 1;2(5):655-665 (2014).
7. **H. Erbil Abaci**, Raghavendra Devendra, Rohan Soman, German Drazer and Sharon Gerecht. Microbioreactors to manipulate oxygen tension and shear stress in the microenvironment of vascular stem and progenitor cells *Biotechnology and Applied Biochemistry. Special Issue: Stem Cells and Regenerative Medicine* 59 (2) (2012).
8. **H. Erbil Abaci**, Raghavendra Devendra, Quinton Smith, Sharon Gerecht and German Drazer. Design and development of microbioreactors for long-term cell culture in controlled oxygen microenvironments. *Biomedical Microdevices* 14(1):145-52 (2012).
9. **H. Erbil Abaci**, Rachel Truitt, Scott Tan, and Sharon Gerecht. Unforeseen decreases in dissolved oxygen levels affect tube formation kinetics in collagen gels *American Journal of Physiology - Cell Physiology* 301 (2): C431-40 (2011).
10. **H. Erbil Abaci**^{*}, Rachel Truitt^{*}, Eli Luong, German Drazer and Sharon Gerecht. Adaptation to oxygen deprivation in cultures of human pluripotent stem cells, endothelial progenitor cells, and umbilical vein endothelial cells. *American Journal of Physiology - Cell Physiology* 298(6) (2010).
11. **H. Erbil Abaci**, Sacide Alsoy A. Modeling of Hemodialysis Operation. *Annals of Biomedical Engineering* 38:3347-3362 (2010).

Reviews and Book Chapters

1. Jia Zhu and **H. Erbil Abaci**. Human skin-on-chip for Mpox Pathogenesis and Drug Development. *Trends in Pharmacological Sciences* (under review).

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2. Nilufar Ismayilzada, Ceren Tarar, Sajjad Rahmani Dabbagh, **H. Erbil Abaci**, and Savas Tasoglu. Skin-on-a-chip technologies towards clinical translation. Advanced Sensors (under review).
3. Mandy B. Esch, Eun-Jin Lee, Zachary Krassin, **H. Erbil Abaci**, Gretchen J. Mahler. Pumpless multi organ microphysiological systems to study (nano)therapeutics. Wiley Interdisciplinary Reviews, (under review).
4. Eun Young Jeon, Leila Sorrells, and **H. Erbil Abaci**[†]. Biomaterials and bioengineering to guide tissue morphogenesis in epithelial organoids. Frontiers in Bioengineering and Biotechnology, Invited Review 10 (2022).
5. Grace Ji-eun Shin, **H. Erbil Abaci**, Madison Christine Smith. Cellular pathogenesis of chemotherapy-induced peripheral neuropathy: insights from Drosophila and human-engineered skin models. Frontiers in Pain Research, Invited Review, 3 (2022)
6. Alberto Pappalardo, David Alvarez-Cespedes, Linh Ha Vu, **H. Erbil Abaci**[†]. Advances on skin-on-a-chip technologies” in the book: “Principles of Human Organs-on-Chips” edited by Dr. Masoud Mozafari (2022).
7. Lauren A Herron, Corey S Hansen, and **H. Erbil Abaci** [†]. Engineering tissue-specific blood vessels. Bioengineering & Translational Medicine (2019)
8. Etienne CE Wang, Yanne Doucet, **H. Erbil Abaci**, Joanna Jackow, Zongyou Guo, Angela M. Christiano. Hair Transplantation: The Promise of Cell Therapy. Chapter of the book “Hair Transplantation - 6th Edition” (2020).
9. **H. Erbil Abaci**, Zongyou Guo, Yanne Doucet, Joanna Jackow, and Angela M. Christiano. Next generation human skin constructs as advanced tools for drug development. Experimental Biology and Medicine, Invited Review, (2017).
12. Balaji Srinivasan, Aditya Reddy Kolli, Mandy Brigitte Esch, **H. Erbil Abaci**, Michael L. Shuler, James J. Hickman. TEER Measurement Techniques for Organs-on-Chips Systems. Journal of Laboratory Automation 20(2):107-126 (2014). *Review*
13. **H. Erbil Abaci**, Sharon Gerecht, and German Drazer. Recapitulating the vascular microenvironment in microfluidic platforms. Nano LIFE 3(1) (2013). *Review*
14. **H. Erbil Abaci**, Donny Hanjaya Putra, Sharon Gerecht. The role of hypoxia and matrix manipulation in vascular engineering. Chapter of the book “Biophysical regulation of vascular differentiation and assembly” (2011).

Thesis

Ph.D. (Chemical and Biomolecular Engineering): Monitoring and Control of Dissolved Oxygen Levels in Vascular Microenvironment, Johns Hopkins University, Baltimore, USA, (2013)

M.Sc. (Chemical Engineering): Modeling of Hemodialysis Operation, Izmir Institute of Technology, Izmir, Turkey, (2008)

13) Invited and/or Peer-Selected Oral Presentations at Local, Regional, National or International Levels:

- **H. Erbil Abaci**, Forward and Reverse Engineering Strategies for Human Skin, **Translational Research Center Seminar Series at Koc University**, Turkey, 2023, Invited Seminar, March 2023.
- **H. Erbil Abaci**, Controlling 3D Tissue Geometries to Bioengineer Functional Human Skin, **Seminar Series at Chemical and Biomedical Engineering, Cleveland State University**, 2023, Invited Seminar, March 2023.
- **H. Erbil Abaci**, Wearable Skin Constructs with Region-Specific Biomechanical Properties, **Gordon Conference, Virtual Seminar Series**, Invited Talk, 2022.

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- **H. Erbil Abaci**, Reconnecting the Skin and its Vasculature: Can Function Follow Form?, **Grand Rounds**, Department of Dermatology, Seminar, 2022.
- **H. Erbil Abaci**, Mimicking Complex Tissue Geometries to Generate Functional Human Skin, **Interdisciplinary Seminar Series at Hebei University**, China, Invited Seminar, 2022
- Alberto Pappalardo, David Alvarez-Cespedes, Shuyang Fang, Abigail R. Herschman, Eun Young Jeon, Kristin M. Myers, Jeffrey W. Kysar, and **H. Erbil Abaci**, Wearable Engineered Human Skin with Region-specific Cellular, Extracellular and Mechanical Properties, **TERMIS**, 2022, Toronto. *Talk*
- Eun Young Jeon, Alberto Pappalardo, Leila Sorrells, and **H. Erbil Abaci**, Spatially-controlled skin morphogenesis via extracellular matrix cues and asymmetrical morphogen gradients, **TERMIS**, 2022, Toronto. *Talk*
- Eun Young Jeon, Alberto Pappalardo, Leila Sorrells, and **H. Erbil Abaci**, Spatially-controlled skin morphogenesis via extracellular matrix cues and asymmetrical morphogen gradients, **Society of Investigative Dermatology**, 2021, Portland. *Talk*
- Leila Sorrells, Alberto Pappalardo, David Alvarez-Cespedez, Eun Young Jeon, , and **H. Erbil Abaci**, A biopsy-sized 3D model of skin vascular plexus and appendages enables monitoring T cell trafficking, **Society of Investigative Dermatology**, 2021, Portland. *Talk*
- Alberto Pappalardo, Lauren Herron, David E. Alvarez Cespedes and **H. Erbil Abaci**, Efficacy of engineered skin grafts prevascularized with skin-specific and non-specific endothelial cells, **BEIS** (2021), Boston. *Invited Talk*
- **H. Erbil Abaci**, The Hairy Truth About Hair, **Future Tech Podcast**, (2019). Interview
- **H. Erbil Abaci**, Long Beautiful Hair, **Finding Genius Podcast**, (2019). Interview
- **H. Erbil Abaci**, Abigail Coffman, Yanne Doucet, James Chen, Joanna Jackow, Etienne Wang, Zongyou Guo, and Angela M. Christiano. Enhancing the efficiency of engineered hair follicles with master regulators and extrinsic factors. **Society of Investigative Dermatology**, 2019, Chicago. *Talk*
- **H. Erbil Abaci**, Micropatterning hair follicles and vasculature in human skin constructs using 3D printing, **NextGen Stem Cell Conference in Connecticut** (2018). *Invited Talk*
- **H. Erbil Abaci**, Bioprinting complex human skin with anatomical features, **NASA Headquarters**, Washington D.C., 2018. *Invited Talk*
- **H. Erbil Abaci**, Microphysiological models of human skin and brain vasculature for drug testing. **ECI: Nanotechnology in Medicine II**, 2018, Portugal. *Invited Talk*
- **H. Erbil Abaci**, Abigail Coffman, Yanne Doucet, James Chen, Joanna Jackow, Etienne Wang, Zongyou Guo, and Angela M. Christiano. Induction of human hair growth using vascularized 3D hair follicle constructs. **Society of Investigative Dermatology**, 2018, Orlando. *Talk*
- **H. Erbil Abaci**, Holly Wobma, Yanne Doucet, Jung U Shin, Joanna Jackow, Zongyou Guo, Keith Yeager, Gordana Vunjak-Novakovic and Angela Christiano. Developing a 3D microfluidic model of immune-competent human skin using autologous cells, **Society of Investigative Dermatology**, 2017, Portland. *Talk*
- **H. Erbil Abaci**, Abigail Coffman, Etienne Wang, James Chen, Zongyou Guo, Yanne Doucet, and Angela M. Christiano. Recapitulating Hair Follicle Neogenesis in Human Skin Equivalents. **The Symposium on Biomaterials Science**, 2016, Rutgers University, New Jersey. *Talk*
- **H. Erbil Abaci***, Etienne Wang, Zongyou Guo, Abigail Coffman, James Chen and Angela M. Christiano. Synthetic Developmental Tissue Engineering of Human Hair Follicles, **Society of Investigative Dermatology**, 2016, Arizona. *Talk*

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- **H. Erbil Abaci**^{*}, Zongyou Guo, Abigail Coffman, and Angela M. Christiano. Synthetic Developmental Tissue Engineering of Complex Skin, **Skin Disease Research Center**, Columbia University Medical Center, 2016, New York. *Invited Talk*
- **H. Erbil Abaci**, Zongyou Guo, Chong Shen, Karl Gledhill, Abigail Coffman^{*}, Claire Higgins, Satoru Shinkuma, Wen-han Lee, Brian Gillette, Samuel K. Sia, Michael Shuler and Angela M. Christiano. Engineering a 3D microphysiological system for Alopecia Areata. **Locks of Love Annual Symposium**, 2015, New York. *Talk*
- **H. Erbil Abaci**, Zongyou Guo, Chong Shen, Karl Gledhill, Abigail Coffman, Claire Higgins, Satoru Shinkuma, Wen-han Lee, Brian Gillette, Samuel K. Sia and Angela M. Christiano. Generation of Complex 3D Skin Equivalents from Human Induced Pluripotent Stem Cell (iPSC)-Derived Cells. **DARPA – Microphysiological Systems Review Meeting**, February, 2015, Washington D.C. *Talk*
- **H. Erbil Abaci**, Karl Gledhill, Zongyou Guo, James Hickman, Michael Shuler and Angela M. Christiano. Integration of human skin equivalents on microfluidic platforms. **DARPA – Microphysiological Systems Review Meeting**, February, 2015, Washington D.C. *Talk*
- **H. Erbil Abaci**, Rachel Truitt, Scott Tan and Sharon Gerecht. Determining the effect of oxygen tension on vascular cell responses. **Aegean 4th International Conferences on Tissue Engineering**, Chania, Greece, 2011. *Talk*
- **H. Erbil Abaci**, Rachel Truitt, Eli Luong, Drazer G, and Sharon Gerecht. Adaptation to Oxygen Deprivation in Human Pluripotent Stem Cells, Endothelial Progenitors, and Endothelial Cells. **American Heart Association Scientific Sessions**, Orlando, FL, November 14-18, 2009. *Talk*