

Catherine M. Klapperich, Ph.D.

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EDUCATION

- **Ph.D. Mechanical Engineering** May 2000
University of California Berkeley, California, USA
- **S.M. Engineering Sciences** June 1995
Harvard University Cambridge, MA, USA
- **B.S. Materials Science and Engineering** June 1994
Northwestern University Evanston, IL, USA

POSITIONS

- **Boston University** Boston, MA, USA
College of Engineering 2003 - Present
 - **Departments of Biomedical Engineering and Mechanical Engineering:**
 - Professor 2015 - present
 - Associate Professor 2010-2015
 - Assistant Professor 2003-2010
 - **Division of Materials Science and Engineering:**
 - Professor 2015- present
 - Associate Professor 2010-2015
 - **Scientific Director, DAMP Laboratory:** 2022-present
As the COVID-19 pandemic wanes, we are converting the 8 robots in the automated testing laboratory to function as a cloud-based molecular biology resource for the university and beyond. www.damplab.org
 - **Scientific Director, Boston University Clinical Testing Laboratory:** 2020-2022
Led a university wide effort to set up a CLIA high complexity laboratory to perform an FDA Emergency Use Authorized laboratory developed tests. By spring 2022, we had run 2 million tests and created a biobank of more than 5000 SARS-CoV-2 sequences in conjunction with the National Emerging Infectious Diseases Laboratory.
 - **Vice Chair, Department of Biomedical Engineering:** 2019-2021
Worked closely with the Chair to create mentorship documentation and procedures for junior faculty. One on one mentorship of junior faculty. I gave up this position and the directorship of the PDC to focus on my significant COVID-19 testing responsibilities.
 - **Founding Director, BU College of Engineering Precision Diagnostics Center (PDC):** 2017-2021
 - **Associate Director, BU College of Engineering Precision Diagnostics Center (PDC):** 2021-2023
 - **Associate Dean for Research and Tech Development, College of Engineering:** 2015-2019
 - **Associate Chair for Graduate Studies, Dept. of Biomedical Engineering:** 2013-2015
 - **Director, NIH POCTRN Center for Future Technologies in Cancer Care:** 2012-2018
 - * Started a \$9 Million Center funded by U54 NIH grant (Klapperich PI)
 - * Founded a national resource space dedicated to prototyping point of care (POC) devices for the detection, diagnosis and treatment of cancer.
 - * Awarded training fellowships to early career scientists.
 - * Promoted the use of POC technologies to lower healthcare costs and increase value in healthcare delivery to patients through workshops, training and seed grant support.
 - **Faculty of the Graduate Program in Molecular Biology, Cell Biology and Biochemistry:** 2006-present
 - **Faculty of Pharmacology and the Program in Biomolecular Pharmacology:** 2007-present
- **Massachusetts Institute of Technology** Cambridge, MA, USA
Visiting Fellow, Edgerton Center (sabbatical leave) 2011

- **Lawrence Berkeley National Laboratory** Berkeley, CA, USA
Postdoctoral Researcher 2001 - 2003
 Materials Sciences Division, Departments of Chemistry and Molecular Biology. Advisor: C.R. Bertozzi.
 Functional genomics of cell-biomaterial surface interactions in tissue engineered systems.
- **ACLARA Biosciences, Inc.** Mountainview, CA, USA
Senior Research Engineer 2000-2001
 Microfluidic high throughput drug screening, genetic analysis and proteomics.

AWARDS AND HONORS

- **Fellow of the International Academy of Medical and Biological Engineering, 2022**
- **College of Engineering Teacher of the Year, 2021:** Voted by COE Seniors.
- **Special Societal Engineering Award, College of Engineering, 2021:** Awarded for service to the University in the design and build of the BU Clinical Testing Laboratory.
- **American Association for the Advancement of Science Fellow, 2020.**
- **Boston Business Journal Power 50 Award, 2020:** Awarded for service to the University in the design and build of the BU Clinical Testing Laboratory.
- **BME Teacher of the Year, 2020:** Voted by BME Senior Class.
- **Fellow of the Biomedical Engineering Society, 2018.**
- **Member, Board of Directors, Biomedical Engineering Society, 2017-2020.**
- **Vice President, Director at Large, AIMBE, 2017—2019.**
- **Inaugural Dorf-Ebner Faculty Fellow, BU, 2014—2019.**
- **Chair for the Gordon Research Conference “Physics and Chemistry of Microfluidics” 2017, Lucca, ITALY.**
- **Fellow of the American Institute of Medical and Biological Engineering, 2014.**
- **Vice Chair for the Gordon Research Conference “Physics and Chemistry of Microfluidics” 2015, Dover, VT.**
- **Invited Attendee, National Academies of Engineering Frontiers of Engineering, Irvine CA, Sept. 2014.**
- **Invited Delegate, The Grand Challenges Global Summit hosted by US NAE, the UK Royal Academy of Engineering (RAE), and the Chinese Academy of Engineering (CAE), London, ENGLAND, 2013**
- **Faculty Fellow, Kern Family Foundation 2010-2014**
- **Invited Speaker, National Academies of Engineering Frontiers of Engineering, Agra, INDIA, 2010.**
- **Vice Chancellor for Research Fund Award, UC Berkeley, 2000.**
- **National Science Foundation Graduate Research Fellowship, 1994-1997.**
- **Materials Research Society Silver Graduate Research Award, 1998.**
- **Hellman Family Foundation Fellowship, 1997-1998.**
- **American Association of University Women Scholarship, 1993.**

TEACHING

- **Boston University** Boston, MA
College of Engineering 2003-present
 - KH 401 Epistemologies and the Process of Inquiry: Medical Misinformation, Spring 2023, 2024.
 - BE 468 Clinical Applications in Biomedical Engineering, Fall 2019, 2020, 2021, 2022, 2023

- BE 792 Graduate Critical Literature Review, Spring 2020, Spring 2021, Spring 2022.
- BE 465 and BE 466 Biomedical Engineering Senior Project, Fall 2012, Spring 2013, Fall 2013, Spring 2014, Fall 2014, Spring 2015, Fall 2015, Spring 2016, Fall 2016, Spring 2017, Fall 2017, Spring 2018.
- BE/ME 428 Diagnostics and Device Design, Spring 2013. (Designed the course, rework of BE/ME 523)
- EK 131 Engineering in Global Health (with M. Zaman), Fall 2010.
- ME 305 Mechanics of Materials, Fall 2009.
- ME/MS 504 Polymers, Graduate Course, Division of Materials Science, Fall 2008, Fall 2010, Fall 2011, Spring 2012.
- MN/BE 523(ME/BE 523) Mechanics of Biomaterials, Upper Division, Spring 2004, Fall 2004, Fall 2005, Fall 2006, Spring 2009, Spring 2010, Fall 2011. (Designed the course)
- MN/BE/CH(ME/BE/CH) 726 and 727 Biomaterials and Tissue Engineering I and II, Graduate Course and Laboratory, Spring 2005, Fall 2005, Spring 2006, Fall 2006, Spring 2007, Spring 2008. (Designed the course)
- Senior Project Adviser (90+ Senior Undergraduates), 2003-present.

- **Massachusetts Institute of Technology** Cambridge, MA
Edgerton Center 2011
 - EC.710 D-Lab: Health Technologies for the Developing World.
- **University of California** Berkeley, CA
College of Engineering 2002
 - Structural Aspects of Biomaterials, Undergraduate Course.

PUBLICATIONS

Peer Reviewed Articles

- [1] Tara C Bouton, Joseph Atarere, Jacquelyn Turcinovic, Scott Seitz, Cole Sher-Jan, Madison Gilbert, Laura White, Zhenwei Zhou, Mohammad M Hossain, Victoria Overbeck, Lynn Doucette-Stamm, Judy Platt, Hannah E Landsberg, Davidson H Hamer, Catherine Klapperich, Karen R Jacobson, and John H Connor. “Viral dynamics of Omicron and Delta severe acute respiratory syndrome Coronavirus 2 (SARS-CoV-2) variants with implications for timing of release from isolation: A longitudinal cohort study”. In: *Clin. Infect. Dis.* 76.3 (Feb. 2023), e227–e233.
- [2] Brittany A Petros, Jacquelyn Turcinovic, Nicole L Welch, Laura F White, Eric D Kolaczyk, Matthew R Bauer, Michael Cleary, Sabrina T Dobbins, Lynn Doucette-Stamm, Mitch Gore, Parvathy Nair, Tien G Nguyen, Scott Rose, Bradford P Taylor, Daniel Tsang, Erik Wendlandt, Michele Hope, Judy T Platt, Karen R Jacobson, Tara Bouton, Seyho Yune, Jared R Auclair, Lena Landaverde, Catherine M Klapperich, Davidson H Hamer, William P Hanage, Bronwyn L MacInnis, Pardis C Sabeti, John H Connor, and Michael Springer. “Early introduction and rise of the Omicron severe acute respiratory syndrome Coronavirus 2 (SARS-CoV-2) variant in highly vaccinated university populations”. In: *Clin. Infect. Dis.* 76.3 (Feb. 2023), e400–e408.
- [3] Marjon Zamani, Catherine M Klapperich, and Ariel L Furst. “Recent advances in gold electrode fabrication for low-resource setting biosensing”. In: *Lab Chip* 23.5 (Mar. 2023), pp. 1410–1419.
- [7] Chloé Gazon, Margaret Chern, Patrick Lally, R C Baer, Andy Fan, Sébastien Lecommandoux, Catherine Klapperich, Allison M Dennis, James E Galagan, and Mark W Grinstaff. “The quantum dot vs. organic dye conundrum for ratiometric FRET-based biosensors: which one would you chose?” In: *Chem. Sci.* 13.22 (June 2022), pp. 6715–6731.
- [8] Samantha M Hall, Lena Landaverde, Christopher J Gill, Grace M Yee, Madison Sullivan, Lynn Doucette-Stamm, Hannah Landsberg, Judy T Platt, Laura White, Davidson H Hamer, and Catherine Klapperich. “Comparison of anterior nares CT values in asymptomatic and symptomatic individuals diagnosed with SARS-CoV-2 in a university screening program”. In: *PLoS One* 17.7 (2022), e0270694.

- [9] Kayla Kuhfeldt, Jacquelyn Turcinovic, Madison Sullivan, Lena Landaverde, Lynn Doucette-Stamm, Davidson H Hamer, Judy T Platt, Catherine Klapperich, Hannah E Landsberg, and John H Connor. "Examination of SARS-CoV-2 in-class transmission at a large urban university with public health mandates using epidemiological and genomic methodology". In: *JAMA Network Open* 5.8 (2022), e2225430–e2225430.
- [10] Lena Landaverde, David McIntyre, James Robson, Dany Fu, Luis Ortiz, Rita Chen, Samuel M.D. Oliveira, Andy Fan, Amy Barrett, Stephen P. Burgay, Stephen Choate, David Corbett, Lynn Doucette-Stamm, Kevin Gonzales, Davidson H. Hamer, Lilly Huang, Shari Huval, Christopher Knight, Carrie Landa, Diane Lindquist, Kelly Lockard, Trevor L. Macdowell, Elizabeth Mauro, Colleen McGinty, Candice Miller, Maura Monahan, Randall Moore, Judy Platt, Lloyd Rolles, Jeffrey Roy, Tracey Schroeder, Dean R. Tolan, Ann Zaia, Robert A. Brown, Gloria Waters, Douglas Densmore, and Catherine M. Klapperich. "Buildout and Integration of an Automated High-Throughput CLIA Laboratory for SARS-CoV-2 Testing on a Large Urban Campus". In: *SLAS Technology* (June 2022). ISSN: 2472-6303. DOI: 10.1016/J.SLAST.2022.06.003. URL: <https://linkinghub.elsevier.com/retrieve/pii/S2472630322051639>.
- [11] Lena Landaverde, Jacquelyn Turcinovic, Lynn Doucette-Stamm, Kevin Gonzales, Judy Platt, John H. Connor, and Catherine Klapperich. "Comparison of BinaxNOW and SARS-CoV-2 qRT-PCR Detection of the Omicron Variant from Matched Anterior Nares Swabs". In: *Microbiology Spectrum* 10.6 (2022), e01307–22. DOI: 10.1128/spectrum.01307-22.
- [12] Justin M Rosenbohm, Catherine M Klapperich, and Mario Cabodi. "Tunable Duplex Semiquantitative Detection of Nucleic Acids with a Visual Lateral Flow Immunoassay Readout". In: *Analytical Chemistry* 94.9 (2022), pp. 3956–3962.
- [13] Karthika Sankar, R Baer, Chloé Gazon, Robert C Sabatelle, Sébastien Lecommandoux, Catherine M Klapperich, James E Galagan, and Mark W Grinstaff. "An Allosteric Transcription Factor DNA-Binding Electrochemical Biosensor for Progesterone". In: *ACS Sensors* 7.4 (2022), pp. 1132–1137.
- [14] Jacquelyn Turcinovic, Kayla Kuhfeldt, Madison Sullivan, Lena Landaverde, Judy T Platt, Lynn Doucette-Stamm, William P Hanage, Davidson H Hamer, Catherine Klapperich, Hannah E Landsberg, et al. "Linking contact tracing with genomic surveillance to deconvolute SARS-CoV-2 transmission on a university campus". In: *Iscience* 25.11 (2022), p. 105337.
- [15] Marjon Zamani, Josh Dupaty, RC Baer, Uros Kuzmanovic, Andy Fan, Mark W Grinstaff, James E Galagan, and Catherine M Klapperich. "Paper-Based Progesterone Sensor Using an Allosteric Transcription Factor". In: *ACS Omega* (2022).
- [16] Dan Davidi, Susan Fitzgerald, Hannah L Glaspell, Samantha Jalbert, Catherine M Klapperich, Lena Landaverde, Stylianos Maheras, Stephanie E Mattoon, Vanessa M Britto, Giang T Nguyen, et al. "Amplicon residues in research laboratories masquerade as COVID-19 in surveillance tests". In: *Cell Reports Methods* 1.1 (2021), p. 100005.
- [17] Davidson H. Hamer, Laura F. White, Helen E. Jenkins, Christopher J. Gill, Hannah E. Landsberg, Catherine Klapperich, Katia Bulekova, Judy Platt, Linette Decarie, Wayne Gilmore, Megan Pilkington, Trevor L. Macdowell, Mark A. Faria, Douglas Densmore, Lena Landaverde, Wenrui Li, Tom Rose, Stephen P. Burgay, Candice Miller, Lynn Doucette-Stamm, Kelly Lockard, Kenneth Elmore, Tracy Schroeder, Ann M. Zaia, Eric D. Kolaczyk, Gloria Waters, and Robert A. Brown. "Assessment of a COVID-19 Control Plan on an Urban University Campus during a Second Wave of the Pandemic". In: *JAMA Network Open* 4 (6 2021). ISSN: 25743805. DOI: 10.1001/jamanetworkopen.2021.16425.
- [19] Nikunja Kolluri, Shwetha Kamath, Patrick Lally, Mina Zanna, James Galagan, Jesse Gitaka, Moses Kamita, Mario Cabodi, Srinivasa Raju Lolabattu, and Catherine M Klapperich. "Development and Clinical Validation of Iso-IMRS: A Novel Diagnostic Assay for *P. falciparum* Malaria". In: *Analytical Chemistry* 93.4 (2021), pp. 2097–2105.
- [20] Marjon Zamani, Ariel L Furst, and Catherine M Klapperich. "Strategies for engineering affordable technologies for point-of-care diagnostics of infectious diseases". In: *Accounts of Chemical Research* 54.20 (2021), pp. 3772–3779.

- [21] Marjon Zamani, James M Robson, Andy Fan, Michael S Bono Jr, Ariel L Furst, and Catherine M Klapperich. “Electrochemical strategy for low-cost viral detection”. In: *ACS Central Science* 7.6 (2021), pp. 963–972.
- [22] Marjon Zamani, Victoria Yang, Lizi Maziashvili, Gang Fan, Catherine M Klapperich, and Ariel L Furst. “Surface requirements for optimal biosensing with disposable gold electrodes”. In: *ACS Measurement Science Au* 2.2 (2021), pp. 91–95.
- [23] Mingfu Chen, Chloé Grazon, Prerana Sensharma, Thuy T Nguyen, Yungpeng Feng, Margaret Chern, RC Baer, Nitinun Varongchayakul, Katherine Cook, Sebastien Lecommandoux, et al. “Hydrogel-Embedded Quantum Dot–Transcription Factor Sensors for Quantitative Progesterone Detection”. In: *ACS Applied Materials & Interfaces* 12.39 (2020), pp. 43513–43521.
- [24] Mingfu Chen, Thuy T Nguyen, Nitinun Varongchayakul, Chloé Grazon, Margaret Chern, RC Baer, Sébastien Lecommandoux, Catherine M Klapperich, James E Galagan, Allison M Dennis, et al. “Surface immobilized nucleic acid–transcription factor quantum dots for biosensing”. In: *Advanced Healthcare Materials* 9.17 (2020), p. 2000403.
- [26] Chloé Grazon, R C Baer, Uroš Kuzmanović, Thuy Nguyen, Mingfu Chen, Marjon Zamani, Margaret Chern, Patricia Aquino, Xiaoman Zhang, Sébastien Lecommandoux, et al. “A progesterone biosensor derived from microbial screening”. In: *Nature communications* 11.1 (2020), pp. 1–10.
- [28] Nikunja Kolluri, Nikolas Albarran, Andy Fan, Alex Olson, Manish Sagar, Anna Young, José Gomez-Marquez, and Catherine M Klapperich. “SNAPflex: a paper-and-plastic device for instrument-free RNA and DNA extraction from whole blood”. In: *Lab on a Chip* 20.18 (2020), pp. 3386–3398.
- [31] Lena Landaverde, Winnie Wong, Gabriela Hernandez, Andy Fan, and Catherine Klapperich. “Method for the elucidation of LAMP products captured on lateral flow strips in a point of care test for HPV 16”. In: *Analytical and bioanalytical chemistry* 412.24 (2020), pp. 6199–6209.
- [32] Rose A Lee, Helena De Puig, Peter Q Nguyen, Nicolaas M Angenent-Mari, Nina M Donghia, James P McGee, Jeffrey D Dvorin, Catherine M Klapperich, Nira R Pollock, and James J Collins. “Ultrasensitive CRISPR-based diagnostic for field-applicable detection of Plasmodium species in symptomatic and asymptomatic malaria”. In: *Proceedings of the National Academy of Sciences* 117.41 (2020), pp. 25722–25731.
- [33] Justin M Rosenbohm, James M Robson, Rishabh Singh, Rose Lee, Jane Y Zhang, Catherine M Klapperich, Nira R Pollock, and Mario Cabodi. “Rapid electrostatic DNA enrichment for sensitive detection of *Trichomonas vaginalis* in clinical urinary samples”. In: *Analytical Methods* 12.8 (2020), pp. 1085–1093.
- [35] Lolabattu S Raju, Shwetha Kamath, Manjunatha C Shetty, Sanghamitra Satpathi, Akshaya K Mohanty, Susanta K Ghosh, Nikunja Kolluri, Catherine M Klapperich, Mario Cabodi, Govindarajan Padmanaban, et al. “Genome Mining–Based Identification of Identical Multirepeat Sequences in *Plasmodium falciparum* Genome for Highly Sensitive Real-Time Quantitative PCR Assay and Its Application in Malaria Diagnosis”. In: *The Journal of Molecular Diagnostics* 21.5 (2019), pp. 824–838.
- [37] Audrey L Horst, Justin M Rosenbohm, Nikunja Kolluri, Justin Hardick, Charlotte A Gaydos, Mario Cabodi, Catherine M Klapperich, and Jacqueline C Linnes. “A paperfluidic platform to detect *Neisseria gonorrhoeae* in clinical samples”. In: *Biomedical microdevices* 20.2 (2018), pp. 1–7.
- [38] N Kolluri, CM Klapperich, and M Cabodi. “Towards lab-on-a-chip diagnostics for malaria elimination”. In: *Lab on a Chip* 18.1 (2018), pp. 75–94.
- [40] George W Pratt, Andy Fan, Bissrat Melakeberhan, and Catherine M Klapperich. “A competitive lateral flow assay for the detection of tenofovir”. In: *Analytica chimica acta* 1017 (2018), pp. 34–40.

- [42] Anthony D Cristillo, Claire C Bristow, Rosanna Peeling, Barbara Van Der Pol, Sasha Herbst de Cortina, Ivan K Dimov, Catherine Klapperich, Purnima Madhivanan, Sheldon R Morris, and Jeffrey D Klausner. “Diagnostics: Proceedings of the STAR Sexually Transmitted Infection—Clinical Trial Group Programmatic Meeting”. In: *Sexually Transmitted Diseases* 44.4 (2017), p. 211.
- [44] Constantinos Katevatis, Andy Fan, and Catherine M Klapperich. “Low concentration DNA extraction and recovery using a silica solid phase”. In: *PloS one* 12.5 (2017), e0176848.
- [47] Anna K Boardman, Winnie S Wong, W Ranjith Premasiri, Lawrence D Ziegler, Jean C Lee, Milos Miljkovic, Catherine M Klapperich, Andre Sharon, and Alexis F Sauer-Budge. “Rapid detection of bacteria from blood with surface-enhanced Raman spectroscopy”. In: *Analytical Chemistry* 88.16 (2016), pp. 8026–8035.
- [50] Chloe S Kim, Sarah Vanture, Margaret Cho, Catherine M Klapperich, Catharine Wang, and Franklin W Huang. “Awareness, interest, and preferences of primary care providers in using point-of-care cancer screening technology”. In: *Plos One* 11.1 (2016), e0145215.
- [51] JC Linnes, NM Rodriguez, L Liu, and CM Klapperich. “Polyethersulfone improves isothermal nucleic acid amplification compared to current paper-based diagnostics”. In: *Biomedical microdevices* 18.2 (2016), pp. 1–12.
- [53] Natalia M Rodriguez, Winnie S Wong, Lena Liu, Rajan Dewar, and Catherine M Klapperich. “A fully integrated paperfluidic molecular diagnostic chip for the extraction, amplification, and detection of nucleic acids from clinical samples”. In: *Lab on a Chip* 16.4 (2016), pp. 753–763.
- [55] George W Pratt, Andy Fan, and Catherine M Klapperich. “Colorimetric detection of azidothymidine using an alkyne-modified dextran substrate”. In: *ACS Biomaterials Science & Engineering* 1.5 (2015), pp. 314–319.
- [56] Natalia M Rodriguez, Jacqueline C Linnes, Andy Fan, Courtney K Ellenson, Nira R Pollock, and Catherine M Klapperich. “Paper based RNA extraction, in situ isothermal amplification, and lateral flow detection for low-cost, rapid diagnosis of influenza A (H1N1) from clinical specimens”. In: *Analytical Chemistry* 87.15 (2015), pp. 7872–7879.
- [60] Jacqueline C Linnes, Andy Fan, Natalia M Rodriguez, Bertrand Lemieux, Huimin Kong, and Catherine M Klapperich. “Paper based molecular diagnostic for Chlamydia trachomatis”. In: *RSC advances* 4.80 (2014), pp. 42245–42251.
- [61] Sharon Y Wong, Mario Cabodi, Jason Rolland, and Catherine M Klapperich. “Evaporative concentration on a paper-based device to concentrate analytes in a biological fluid”. In: *Analytical Chemistry* 86.24 (2014), pp. 11981–11985.
- [62] Samantha Byrnes, Andy Fan, Jacob Trueb, Francis Jareczek, Mark Mazzochette, Andre Sharon, Alexis F Sauer-Budge, and Catherine M Klapperich. “A portable, pressure driven, room temperature nucleic acid extraction and storage system for point of care molecular diagnostics”. In: *Analytical Methods* 5.13 (2013), pp. 3177–3184.
- [65] Shichu Huang, Jaephil Do, Madhumita Mahalanabis, Andy Fan, Lei Zhao, Lisa Jepeal, Satish K Singh, and Catherine M Klapperich. “Low cost extraction and isothermal amplification of DNA for infectious diarrhea diagnosis”. In: *PLoS One* 8.3 (2013), e60059.
- [67] WR Premasiri, AF Sauer-Budge, JC Lee, CM Klapperich, and LD Ziegler. “Rapid bacterial diagnostics via surface-enhanced Raman microscopy”. In: *Spectroscopy* 28.5 (2013), pp. 52–+.
- [68] Jane Yuqian Zhang, Madhumita Mahalanabis, Lena Liu, Jessie Chang, Nira R Pollock, and Catherine M Klapperich. “A disposable microfluidic virus concentration device based on evaporation and interfacial tension”. In: *Diagnostics* 3.1 (2013), pp. 155–169.
- [69] Qingqing Cao, Madhumita Mahalanabis, Jessie Chang, Brendan Carey, Christopher Hsieh, Ahjegannie Stanley, Christine A Odell, Patricia Mitchell, James Feldman, Nira R Pollock, and Catherine Klapperich. “Microfluidic chip for molecular amplification of influenza A RNA in human respiratory specimens”. In: *PLoS One* 7.3 (2012), e33176.

- [72] Brian D Plouffe, Madhumita Mahalanabis, Laura H Lewis, Catherine M Klapperich, and Shashi K Murthy. “Clinically relevant microfluidic magnetophoretic isolation of rare-cell populations for diagnostic and therapeutic monitoring applications”. In: *Analytical Chemistry* 84.3 (2012), pp. 1336–1344.
- [73] AF Sauer-Budge, LD Ziegler, WR Premasiri, CM Klapperich, and JC Lee. “Rapid bacterial diagnostics via surface-enhanced Raman microscopy”. In: *Spectroscopy* 27.6 (2012), s8–s21.
- [75] QingQing Cao, Min-Cheol Kim, and Catherine Klapperich. “Plastic microfluidic chip for continuous-flow polymerase chain reaction: Simulations and experiments”. In: *Biotechnology Journal* 6.2 (2011), pp. 177–184.
- [76] Jaephil Do, Jane Y Zhang, and Catherine M Klapperich. “Maskless writing of microfluidics: Rapid prototyping of 3D microfluidics using scratch on a polymer substrate”. In: *Robotics and Computer-Integrated Manufacturing* 27.2 (2011), pp. 245–248.
- [77] Alexander W Gruentzig, Catherine M Klapperich, Andre Sharon, Jeff Braman, Anirban Chatterjee, and Alexis F Sauer-Budge. “A new DNA extraction method for automated food analysis”. In: *Analytical Methods* 3.7 (2011), pp. 1507–1513.
- [78] Min-Cheol Kim, Brett C Isenberg, Jason Sutin, Amit Meller, Joyce Y Wong, and Catherine M Klapperich. “Programmed trapping of individual bacteria using micrometre-size sieves”. In: *Lab on a Chip* 11.6 (2011), pp. 1089–1095.
- [79] Madhumita Mahalanabis, Jaephil Do, Hussam ALMuayad, Jane Y Zhang, and Catherine M Klapperich. “Erratum to: An integrated disposable device for DNA extraction and helicase dependent amplification”. In: *Biomedical Microdevices* 13.3 (2011), pp. 599–602.
- [82] Anirban Chatterjee, Paul L Mirer, Elvira Zaldivar Santamaria, Catherine Klapperich, Andre Sharon, and Alexis F Sauer-Budge. “RNA isolation from mammalian cells using porous polymer monoliths: an approach for high-throughput automation”. In: *Analytical Chemistry* 82.11 (2010), pp. 4344–4356.
- [83] Min-Cheol Kim and Catherine Klapperich. “A new method for simulating the motion of individual ellipsoidal bacteria in microfluidic devices”. In: *Lab on a Chip* 10.18 (2010), pp. 2464–2471.
- [84] Madhumita Mahalanabis, Jaephil Do, Hussam ALMuayad, Jane Y Zhang, and Catherine M Klapperich. “An integrated disposable device for DNA extraction and helicase dependent amplification”. In: *Biomedical Microdevices* 12.2 (2010), pp. 353–359.
- [85] Jane Yuqian Zhang, Jaephil Do, W Ranjith Premasiri, Lawrence D Ziegler, and Catherine M Klapperich. “Rapid point-of-care concentration of bacteria in a disposable microfluidic device using meniscus dragging effect”. In: *Lab on a Chip* 10.23 (2010), pp. 3265–3270.
- [87] Sara Gillers, Christopher D Atkinson, Aaron C Bartoo, Madhumita Mahalanabis, Michael O Boylan, John H Schwartz, Catherine Klapperich, and Satish K Singh. “Microscale sample preparation for PCR of *C. difficile* infected stool”. In: *Journal of Microbiological Methods* 78.2 (2009), pp. 203–207.
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- [89] Jessica D Kaufman and Catherine M Klapperich. “Surface detection errors cause overestimation of the modulus in nanoindentation on soft materials”. In: *Journal of the Mechanical Behavior of Biomedical Materials* 2.4 (2009), pp. 312–317.
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- [92] M Dominika Kulinski, Madhumita Mahalanabis, Sara Gillers, Jane Y Zhang, Satish Singh, and Catherine M Klapperich. “Sample preparation module for bacterial lysis and isolation of DNA from human urine”. In: *Biomedical Microdevices* 11.3 (2009), pp. 671–678.

- [93] Madhumita Mahalanabis, Hussam Al-Muayad, M Dominika Kulinski, Dave Altman, and Catherine M Klapperich. "Cell lysis and DNA extraction of gram-positive and gram-negative bacteria from whole blood in a disposable microfluidic chip". In: *Lab on a Chip* 9.19 (2009), pp. 2811–2817.
- [95] Alexis F Sauer-Budge, Paul Mirer, Anirban Chatterjee, Catherine M Klapperich, David Chargin, and Andre Sharon. "Low cost and manufacturable complete microTAS for detecting bacteria". In: *Lab on a Chip* 9.19 (2009), pp. 2803–2810.
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- [100] Jessica D Kaufman, Gregory J Miller, Elise F Morgan, and Catherine M Klapperich. "Time-dependent mechanical characterization of poly (2-hydroxyethyl methacrylate) hydrogels using nanoindentation and unconfined compression". In: *Journal of Materials Research* 23.5 (2008), pp. 1472–1481.
- [103] Nathaniel J Spencer, Douglas A Cotanche, and Catherine M Klapperich. "Peptide-and collagen-based hydrogel substrates for in vitro culture of chick cochleae". In: *Biomaterials* 29.8 (2008), pp. 1028–1042.
- [104] A Bhattacharyya and CM Klapperich. "Design and testing of a disposable microfluidic chemiluminescent immunoassay for disease biomarkers in human serum samples". In: *Biomedical Microdevices* 9.2 (2007), pp. 245–251.
- [105] Arpita Bhattacharyya and Catherine M Klapperich. "Mechanical and chemical analysis of plasma and ultraviolet–ozone surface treatments for thermal bonding of polymeric microfluidic devices". In: *Lab on a Chip* 7.7 (2007), pp. 876–882.
- [107] Jessica D Kaufman, Jie Song, and Catherine M Klapperich. "Nanomechanical analysis of bone tissue engineering scaffolds". In: *Journal of Biomedical Materials Research Part A* 81.3 (2007), pp. 611–623.
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- [111] Justyn Jaworski and Catherine M Klapperich. "Fibroblast remodeling activity at two-and three-dimensional collagen–glycosaminoglycan interfaces". In: *Biomaterials* 27.23 (2006), pp. 4212–4220.
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INVITED TALKS SINCE 2015

(From more than 200 total invited talks, conference talks and presentations since 2000. A full list is available upon request.)

- C.M. Klapperich, Keynote Address, "Rapid and High Throughput Diagnostics: Lessons from a COVID-19 Testing Program," CMBS Global Health Workshop, (virtual) 2 August 2023.
- C.M. Klapperich, "Rapid and High Throughput Diagnostics: Lessons from a COVID-19 Testing Program," Tufts University Department of Chemistry Guest Lecture, (virtual) 22 February 2023.
- C.M. Klapperich, "Rapid and High Throughput Diagnostics: Lessons from a COVID-19 Testing Program," McGill University THINK Symposium, Holetown, BARBADOS, 7 February 2023.
- C.M. Klapperich, "Rapid and High Throughput Diagnostics: Lessons from a COVID-19 Testing Program," Department of Chemical and Biomedical Engineering, Florida A&M University-Florida State University College of Engineering, (virtual) 7 October 2022.
- C.M. Klapperich, "Automated High Throughput COVID-19 Testing at Boston University," Grand Rounds, Department of Infectious Disease, Boston University School of Medicine, (virtual) 13 January 2022.
- C.M. Klapperich, Invited Speaker, BU Procurement Supplier's Recognition Event," Boston, MA, 4 October 2021.
- C.M. Klapperich, "Automated High Throughput COVID-19 Testing at Boston University," Meeting of the Boston University Board of Trustees, (virtual) 22 September 2021.
- C.M. Klapperich, Keynote Speech, Undergraduate Matriculation, Boston University, 29 August 2021.
- C.M. Klapperich, "Automated High Throughput COVID-19 Testing at Boston University," BU Photonics Center REU Program Seminar, 5 August 2021.
- C.M. Klapperich, "Paper and Microfluidic Systems for Infectious Disease Diagnostics and Continuous Physiological Monitoring," BULEEVER Seminar, Freetown, LIBERIA, (virtual) 24 June 2021.
- C.M. Klapperich, "Automated High Throughput COVID-19 Testing at Boston University," Hub Cures Seminar, (virtual) 22 June 2021.
- C.M. Klapperich, "Automated High Throughput COVID-19 Testing at Boston University," Microfluidics Consortium, Centre for Business Innovation, Boston, MA, (virtual) 16 June 2021.
- C.M. Klapperich, "Automated High Throughput COVID-19 Testing at Boston University," Bioengineering Seminar, University of Maryland, (virtual) 16 April 2021.
- C.M. Klapperich, "Automated High Throughput COVID-19 Testing at Boston University," BU Precision Diagnostics Center, Annual Symposium, (virtual) 23 March 2021.
- C.M. Klapperich, "COVID-19 Testing at Boston University," BU Student Chapter of the BMES, Faculty Talk, (virtual) 8 March 2021.
- C.M. Klapperich, "Automated High Throughput COVID-19 Testing at Boston University," International Discussion Group on COVID Related Activities," Montreal, CANADA, (virtual) 9 January 2021.
- C.M. Klapperich, Panelist, Society of Women Engineers Grand Challenges Event, 26 February 2020.
- C.M. Klapperich, Panelist, Boston University Postdoc Academy Failure Lab, 29 January 2020.
- C.M. Klapperich, "Paper and Microfluidic Systems for Infectious Disease Diagnostics and Continuous Physiological Monitoring," MRS Fall Meeting, Invited Talk, 2 December 2019.
- C.M. Klapperich, "Paper and Microfluidic Systems for Infectious Disease Diagnostics and Continuous Physiological Monitoring," Department of Microbiology Seminar, NEIDL, Boston University, Boston, MA, 26 November 2019.
- C.M. Klapperich, "Paper and Microfluidic Systems for Infectious Disease Diagnostics and Continuous Physiological Monitoring," Biomedical Engineering Department Seminar, Stony Brook University, Stony Brook, NY, 25 September 2019.
- C.M. Klapperich, "Paper and Microfluidic Systems for Infectious Disease Diagnostics and Continuous Physiological Monitoring," University of Illinois, Chicago, Bioengineering Seminar, 30 August 2019.
- C.M. Klapperich, "Paper and Microfluidic Systems for Infectious Disease Diagnostics and Continuous Physiological Monitoring," Carl Woese Institute for Genomic Biology Seminar, UIUC, Urbana, IL, 27 August 2019.

- C.M. Klapperich, "Paperfluidic Diagnostics to Improve Healthcare Delivery," Biomedical Engineering Colloquium, Purdue University, West Lafayette, IN, 21 August 2019
- J. Galagan, C.M. Klapperich, and M. Grinstaff, "Novel Optical and Electrochemical Sensors for Hormones, Addictive Agents, and More Based on a Native Microbial Sensing," MGH, Center for Addiction Medicine, 2 April 2019.
- C.M. Klapperich, "Paperfluidic Diagnostics to Improve Healthcare Delivery," Dr. John T. Macdonald Foundation Biomedical Nanotechnology Institute @ University of Miami, 5 March 2019.
- C.M. Klapperich, Paperfluidic Diagnostics to Improve Healthcare Delivery, IEEE EMBS Micro and Nanotechnology in Medicine Conference, Koloa, HI, 12 December 2018.
- Opponent at the Thesis Defense of Philippa Reuterswärd, Paperfluidic Diagnostics to Improve Healthcare Delivery, KTH, Stockholm, SWEDEN, 25 May 2018.
- C.M. Klapperich, "Paperfluidic Diagnostics to Improve Healthcare Delivery," Georgia Institute of Technology, BME Seminar Series, 16 April 2018.
- C.M. Klapperich, "Low Cost Molecular Diagnostics HPV Screening," Qiagen, Inc., Waltham, MA, 14 September 2017.
- C.M. Klapperich, "Low Cost Molecular Diagnostics HPV Screening," Wayne State University, Department of Chemistry Colloquium, Detroit, MI, 6 November 2017.
- C.M. Klapperich, "Low Cost Molecular Diagnostics HPV Screening," Rice University, Department of Bioengineering Colloquium, Houston, TX, 14 November 2016.
- C.M. Klapperich, "Low Cost Molecular Diagnostics HPV Screening," Rice University, Department of Bioengineering Colloquium, Houston, TX, 14 November 2016.
- C.M. Klapperich, "Low Cost Molecular Diagnostics for Chlamydia and Gonorrhea," MicroTAS 2016, Keynote Talk, Dublin, IRELAND, 11 October 2016.
- C.M. Klapperich, "Paperfluidic Molecular Diagnostics," National Science Foundation, Paperfluidics Workshop, Alexandria, VA, 12 September 2016.
- C.M. Klapperich, "Low Cost Molecular Diagnostics HPV Screening," IEEE, The 6th International Multidisciplinary Conference on Optofluidics, Beijing, CHINA, 25 July 2016.
- C.M. Klapperich, "Low Cost Molecular Diagnostics HPV Screening," Indian Institute of Technology, Department of Chemical Engineering Colloquium, Chennai, INDIA, 22 August 2016.
- C.M. Klapperich, "Low Cost Molecular Diagnostics HPV Screening," POCTRN Annual All Hands Meeting, Bethesda, MD, 9 June 2016.
- C.M. Klapperich, "Low Cost Molecular Diagnostics for Chlamydia and Gonorrhea," 2016 Programmatic Meeting for Diagnostics, Division of Microbiology and Infectious Diseases, NIAID, NIH, Silver Spring, MD, 20 April 2016.
- C.M. Klapperich, "Paperfluidic Isothermal Amplification Device," Human Placenta Project 3rd Annual Workshop, Bethesda, MD, 14 April 2016.
- C.M. Klapperich, "Low Cost Molecular Diagnostics HPV Screening," CIMIT CRAASH Course Final Seminar, Boston, MA, 8 April 2016.
- C.M. Klapperich, "Low Cost Molecular Diagnostics for Cancer and Infectious Disease," BU College of Engineering Alumni Event, Palo Alto, CA, 28 January 2016.
- C.M. Klapperich, "Low Cost Molecular Diagnostics for Cancer and Infectious Disease," Global Health Seminar Series, McGill University, Montreal, Canada, 22 January 2016.
- C.M. Klapperich, "Low Cost Molecular Diagnostics for Cancer and Infectious Disease," Methuen High School, Engineering Program, 22 December 2015.
- C.M. Klapperich, "Effects of Paper Materials on In Situ Nucleic Acid Amplification," Fall Meeting of the Materials Research Society, Boston, MA, 4 December 2015.

- C.M. Klapperich, “Paper based molecular diagnostics with integrated sample preparation,” 9th International Conference on Nano/Molecular Medicine and Engineering (IEEE-NANOMED 2015), Honolulu, HI, 17 November 2015.
- C.M. Klapperich, “Low Cost Molecular Diagnostics for Cancer and Infectious Disease,” SPIE DCC, Advances in Global Health through Sensing Technologies Conference, Baltimore, MD, 20 April 2015.
- S Wong, M Cabodi, J Rolland, C Klapperich, “Concentrating Biomarkers in Biological Fluids on Paper-based Diagnostics”, Design of Medical Devices Conference, Minneapolis, MN, 13 April 2015.

POPULAR PRESS

Op Eds

- C.M. Klapperich, “How the Dobbs decision changed my research on reproductive health technology,” STAT News, 30 June 2022.
- C.M. Klapperich and R. Weintraub, “Wastewater monitoring must be used as a tool to mitigate future COVID surges,” Boston Globe, 21 March 2022.
- C.M. Klapperich, C. Gaydos, J. Parrish, “Commentary: Despite Doubts Raised On Theranos, Great Need For Quick Diagnoses,” WBUR’s Commonhealth Blog, 19 October 2015.

Outreach

- Regular posts on medical devices and diagnostics with students at blog: www.proflapperich.com. (2020-present)

Media Interviews: Television, Radio and Print

- Guest, Women in Science: We have the power to change the world, with Yifan Gao, UCLA GWISE, <https://www.youtube.com/watch?v=dB1vZj8vMD8>, 31 July 2023.
- Guest, Perpetual Notion Machine, “The Necessity Of Diverse Teams In Health Design, With Dr. Catherine Klapperich,” WORT, Community Radio, Madison, WI, 20 July 2023.
- Guest, The Colin McEnroe Show, Connecticut Public Radio, 19 January 2023.
- Guest, Bloomberg Baystate Business Hour, Bloomberg Radio, iHeart Radio, 6 January 2022.
- MSNBC News Television Interview, “COVID-19 Lab at Boston University,” 26-27 August 2020. *Segment also aired on the Today Show.*
- Quoted, “How BU is using on AI technology to keep Covid-19 in check,” By Hilary Burns, Boston Business Journal, 5 August 2020.
- Quoted, “Universities Need Covid-19 Tests to Reopen. Few Have Them,” By Gregory Barber, WIRED Magazine, 17 July 2020.
- Quoted, “Boston University Prepares To Test Students, Faculty And Staff For Coronavirus,” Fred Thys, WBUR News, 21 May 2020.
- Quoted, “A Maine-made coronavirus test gives fast results, but it has limitations,” By Lori Valigra, Bangor Daily News, 1 April 2020.
- Quoted, “Why It Takes So Long To Get Most COVID-19 Test Results,” By Julie Appleby, Kaiser Health News, 28 March 2020.
- Quoted, “Coronavirus testing shouldn’t be this complicated,” By Nicole Wetsman, The Verge, 17 March 2020.
- C.M. Klapperich, Guest Commentary “Biotech World Abuzz Over Questions About Theranos Technology,” WBUR’s Radio Boston, 19 October 2015.