Carl D. Meinhart

Birth: February 12, 1967, Effingham, Illinois

Nationality: USA

Academic Positions:

Professor, Department of Mechanical Engineering, University of California–Santa Barbara (2008-present)

Associate Professor, Department of Mechanical Engineering, University of California–Santa Barbara (2000-2008)

Assistant Professor, Department of Mechanical Engineering, University of California–Santa Barbara (1996-2000)

Industrial Positions:

Chief Executive Officer, Numerical Design, Inc., Santa Barbara, CA (2012-present)

Co-Founder, Ti-MEMS, Inc., Satan Barbara, CA (2018 – 2022)

Co-Founder, Pi-MEMS Inc., Santa Barbara, CA (2012 – 2016)

Chief Technology Officer, SpectraFluidics Inc. Santa Barbara, CA (2008 – 2011)

Research Scientist, Ford Motor Company, Dearborn, MI (1995 – 1996)

Education:

Ph.D. Theoretical and Applied Mechanics; University of Illinois at Urbana-Champaign, Urbana, Illinois, October 1994
Dissertation: *An investigation of turbulent boundary-layer structure using particle-image velocimetry*.
Advisor: Prof. Ronald J. Adrian

M.S. Theoretical and Applied Mechanics; University of Illinois at Urbana-Champaign, Urbana, Illinois, January 1991

B.S. Agricultural Engineering; University of Illinois at Urbana-Champaign, Urbana, Illinois, August 1989

Academic Honors:

- Invited Speaker, Bay Area Microfluidics Network, Zoom, May, 2020.
- Keynote Speaker, SELECTBIO Conference, San Diego, CA, Sept. 2019.
- Keynote Speaker, SELECTBIO Conference, Rotterdam, NL, June 2019.
- Invited Speaker, SELECTBIO Conference, San Diego, CA, Sept. 2018.
- Invited Speaker, NANOTECH 2018 Conference & Expo, Anaheim, CA, May 2018.
- Invited Speaker, SPIE Photonics West, BIOS, San Francisco, Jan. 2017
- Invited Speaker, SELECTBIO Conference, San Diego, CA, Sept. 2017.
- Keynote Speaker, The 12th International Symposium on Particle Image Veloimetry, Busan, Korea, June 2017.
- Keynote Speaker, COMSOL Users Conference, Newton, MA, Oct. 2016.
- Invited Speaker SELECTBIO Conference, San Diego, CA, Sept. 2016.
- Invited Speaker, Teledyne, Thousand Oaks, CA, Fune 2016.
- Invited Speaker, COMSOL Users Conference, Santa Clara, CA, April 2016.
- Invited Speaker, AIM Photonics Workshop, UC-Santa Barbara, Feb. 2016.
- Chairman, 11th International Symposium on Particle Image Velocimetry, Sept. 2015.
- Invited Speaker SELECTBIO Conference, San Diego, CA, Sept. 2015.
- Invited Speaker SELECTBIO Conference, San Diego, CA, Sept. 2014.
- Keynote Speaker ASME National Congress, San Diego, CA, Nov. 19, 2013.
- Invited Speaker, Gordon Conference: Microfluidics, Physics & Chemistry, St. Lucca, Italy, June 9 – 14, 2013.
- Fellow, APS, Nov. 2011.

- Invited speaker, International Symposium on Micro/Nano Flow Measurement Techniques – Horiba International Science Conference, Tokyo, Sept 20-22, 2010.
- Keynote Speaker, PIV'09, Melbourne, Australia, 2009
- Invited lecturer, CISM, Udine, Italy, 2008
- ASME Outstanding paper award, ASME Congress, Nov. 2007
- Outstanding Alumni Award, Lakeland College, 2007
- Invited speaker, DICP Symposium IX - Miniaturization of Analytical Instruments & micro-System, Dalian, China, 2006
- Invited speaker, 1st IEEE NEMS Conference, Zhuhai, China, 2006
- Keynote speaker, 1st COMSOL Multiphysics User Conference, Boston, MA, 2005
- Keynote speaker, 6th International Conference on Particle Image Velocimetry, Pasadena, CA, 2005
- Keynote speaker, 1st Workshop on Micro-Particle Image Velocimetry, Tech. Unv. of Delft, Netherlands, 2005
- Keynote speaker, International Symposium on Micro & NanoTechnology ISMNT, Honolulu, HI, 2004.
- Invited speaker, Advances in Biological Diagnostics and Medical Applications, San Jose, CA, 2003
- Invited speaker, *Nanomedicine Technology Conferenec,* Boston, MA, 2003
- Invited speaker, European Particle Velocimetry Workshop, Zaragoza, Spain, 2003
- Invited speaker, BioMEMS & Biomedical Nanotech World, Columbus, OH, 2002
- Keynote speaker, Seiken – Particle Image Velocimetry Workshop, Tokyo, Japan, 2002
- Keynote speaker, International Symposium for Flow Visualization, Kyoto, Japan, 2002
- NSF Career Award, 1999
- Who's Who in Science and Engineering, 1997, 1998
- NASA-ASEE Summer Faculty Fellowship, 1997
- C.E. Taylor Experimental Mechanics Award, 1993
- Bronze Tablet Award 1990, FMC Fellowship, 1990
- University of Illinois Educational Fellowship, 1989
- Tau Beta Pi, 1989
- Alpha Epsilon Honorary Society, 1989
- John Deere Scholarship, 1988
- ASAE Honored Member, 1988
- Outstanding Transfer Student Award, 1987

Expert Witness Experience:

- Nov. 2019 – Present, Expert Witness, MEMS-based Oscillators, Nov. 2019 – present.
- Oct. – Dec. 2019, Expert Witness, DNA Sequencing chip, IPR.
- Feb – Nov. 2010, Expert Witness, Deposition, Testimony, US District Court, San Diego, CA.
- Oct 2016 – Jan 2017, Expert Witness Medical Device, Deposition, Los Angeles, CA
- Mar – June 2016, Expert Witness, Ink Jet Printhead, Patent IPR, NY, NY.
- May - July 2015, Expert Witness DNA Sequencing, Deposition/Testimony, Menlo Park, CA.
- Sept. 2004 – Expert witness for patent infringement, Invitrogen, Carlsbad, CA.

Consulting Experience:

- August 2012 – Present, Founder, CEO, Numerical Design, Inc., Santa Barbara, CA.
- August 2012 – Present, co-founder, PiMEMS, Inc., Santa Barbara, CA.
- July 2007 – Dec. 2011, co-Founder, CTO, SpectraFluidics, Inc., Santa Barbara, CA.
- May 2007 – Aug 2008, Numerical simulation of steam transport for solar energy, **Ausra**, Palo Alto, CA.
- April 2004 –March 2007, Microfluidic design of immunoassay instrumentation, **Diagnostic Product Corporation**, El Segundo, CA
- Jan. 2006 – July 2006, Design & numerical simulation of a brain catheter, **Medtronics**, Santa Barbara, CA
- Sept. 2005 – March 2006, Numerical simulation of polymeric solutions for biomedical applications, **Mentor Corp**., Santa Barbara, CA
- Jan. 2004 – May 2004, Flow visualization to improve gradient gel electrophoresis analysis for cholesterol diagnostics, **Berkeley Heart Lab**, Oakland, CA.
- August 2000 – March 2004, Design of immunodiagnostic instrumentation, **ThauMDx**, Santa Barbara, CA

- July 2003 – July 2005, Numerical simulation of heat transfer in turbo machinery, **Advanced Propulsion Technology**, Santa Barbara, CA
- Jan 2000 – present, Fluid diagnostic instrumentation development, **TSI Inc**., St. Paul, MN

Work Experience:

- July 2008 – present , Professor, **University of California**, Santa Barbara, CA
- July 2000-June 2008, Associate Professor, **University of California**, Santa Barbara, CA
- July 1996-July 2000, Assistant Professor, **University of California**, Santa Barbara, CA
- June 1997-August 1997, Summer Faculty Fellow, **NASA Johnson Space Center,** Houston, TX
- July 1995-August 1996, Research Scientist, **Ford Motor Company**, Dearborn, MI
- August 1994-June 1995, Postdoctoral Research Associate, **University of Illinois**, Urbana, IL
- September 1994-October 1994, Visitor, Churchill College, **Cambridge University**, Cambridge CB 1130DS, UK
- January 1990-July 1994, Graduate Research Assistant, **University of Illinois**, Urbana, IL

Current Research Activities:

- Developing and using micro-resolution particle image velocimetry (PIV) for measuring velocity fields in micro-scale flows
- Developing ac electrokinetic-based techniques for enhancing immunoassays and stem cell culturing
- Ti-based thermal ground planes for cooling IC chips
- Developing free surface fluidics (FSF) and combining with SERS for trace chemical detection

Current Teaching Activities:

- Co-Developed a senior-level undergraduate / first year graduate class on numerical optimization.
- Co-Developed a senior-level undergraduate / first year graduate class on multiphysics simulation.
- Developed a sequence of graduate classes on transport phenomena that occur in macroscale and microscale flows.
- Taught graduate-level classes on turbulent flows
- Taught undergraduate fluid mechanics and thermodynamics classes

Reviewing and Refereeing Activity:

- Proceedings of the National Academy of Science
- Measurement Science Technology
- Physics of Fluids
- Journal of Fluid Mechanics
- Experiments in Fluids
- ASME Journal of Fluids Engineering
- ASME - IMECE'99, 00, 01, 02, 03, 04 MEMS Symposia (review committee)
- International Workshop on PIV 99, 01, 05.
- International Symposium of Flow Visualization
- IEEE Aerospace Conference
- NSF Proposals, including a Panel Review Committees

Editorship:

- Proceedings of the Third International Workshop on Particle Image Velocimetry, 1999.
- Member of editorial board Experiments in Fluids, 2004 – 2016.
- Associate editor FLOW, 2020-present

Conference Organization:

- Chair – Eleventh International Symposium on Particle Image Velocimetry, 2015
- Scientific Board – 13th International Symposium on the Application of Lasers to Fluid Mechanics 2006
- Organizing Committee – Sixth International Workshop on Particle Image Velocimetry, 2005.
- •Secretary General - Third International Workshop on Particle Image Velocimetry, 1999

Professional Societies:

- American Physical Society
- American Society of Mechanical Engineers

University Service:

- Undergraduate Council, 2019-present.
- Graduate Council, 2016- 2019
- Faculty Legislature (University Wide), 2012-present
- Faculty Executive Committee (College), 2014 – 2016
- Merit and Promotion Committee (Department), 2012 – 2015
- Distinguished Alumni Committee Chairman (Department), 2014
- Undergraduate Advisor (Department), 2003 – 2004
- Graduate Admissions & Recruitment Committee (Department)
- Design & Computing Committee (Department)
- Liaison with Industrial Development Committee (Department)
- Undergraduate Curriculum Committee (Department)
- College of Engineering Executive Committee (College)
- Ad Hoc Committee for Biomolecular Engineering (College)
- Engineering Sciences Building Committee (College)
- Lead UCSB organizer of a proposal for an NSF Engineering Research Center on Bio-MEMS (College)

Graduate Students Advised:

• Dazhi Wang	Ph.D	2004
• Shannon Stone	Ph.D	2005
• Liu Xiaojun	Ph.D	2005
• Matt Pommer	Ph.D	2007
• Gaurav Soni	Ph.D	2008
• Marin Sigurdson	PhD	2008
• Brian Piorek	PhD	2008
• Hope Feldman	PhD	2009
• Chrysafis Andreou	PhD	2013
• Meysam Rezaei Barmi	PhD	2013
• Mehran Hoonejani	PhD	2015
• Yu-Wei Lui	PhD	2015
• Eric Terry	PhD	2017
• Alex Eden	PhD	2018
• Reza Salemmilani	PhD	2019
• Rustin Mirsafavi	PhD	2020
• Amir Tahmasebipour	PhD	2021
• Srikumar Sheshasayee	M.S.	1997
• Hong-Sheng Zhang	M.S.	1999
• Yang Lu	M.S.	2000
• Marion Volpert	M.S.	2000
• Lorraine Widmann	M.S.	2000
• Mike H. B. Gray	M.S.	2002
• Nari Soundarrajan	M.S.	2002
• Stephen Bradford	M.S.	2007
• Andy Kiel	M.S.	2007
• Nick Judy	MS	2015
• Alex Eden	M.S.	2016

Postdoctoral Students Advised:

• Steve Wereley	9/97 – 7/99 Current Position: Professor, Department of Mechanical Engineering, Purdue University
• Derek Tretheway	1/00 – 8/04

	Current Position: Professor, Department of Mechanical Engineering, Portland State University
• Fredric Bottausci	4/02 – 1/06
• Marin Sigurdson	5/08– 4/15 Current Position: Mechanical Engineering. Innovative MicroTechnology (IMT), Santa Barbara, CA
• Nimisha Srivastava	10/08 – 10/10 Current Position: Member of Technical Staff Twist Bioscience, Bay Area
• Brian Piorek	8/13 – present Current Position: Postdoctoral Student University of California – Santa Barbara
• Payam Bozorgi	8/13 – 1/15 Current Position: CEO PiMEMS, Inc. – Santa Barbara

Staff Engineer Advised:

• Marin Sigurdson	1/00 – 3/13
• Nick Judy	8/08 – 8/12, 8/15 - Present
• T.J. Reed	6/08 - 3/11

Major Grants and Contracts:

- Surface Enhanced Raman Spectroscopy / Microfluidics for Trace Chemical Vapor Detection, $100k, 1/19-12/19.
- Disposable Photonic for Biomedical Assays, AIM Photonics, $170k, 1/19 – 12/20.
- Development of Universal Transducer Components for Integrated Photonics, AIM, $150k, 1/18-12/18.
- Detection of Drugs and Explosives for Forensics, $120k, 10/17-3/18.
- Development of Universal Tranducer Components for Integrated Photonic, $213k, 3/17-12/17.
- Fully-Integrated Raman Detector for Distributed Detection of Chemicals, $500k, 1/16-3/17.
- Detection of Drugs and Explosives for Forensics Analysis, $1350k, ECBC, 9/14-9/17.
- Biomelecular Analysis and Characterization in Nanofluidic Channels $389k, 12/15-11/17 (coPI, w/ Sumita Pennathur)
- C. *elegans* embryos in temperature gradients, NIH, $389k, 7/13 – 6/15 (co PI, w/ Joel Rothman)
- Nanofluidic technology for label-free bioanalytical studies, ARO, 12/12-11/15, $600k (co-PI, w/ Pennethur).
- Microfluidic Raman strategy for rapid cellular identification and classification, ARO, 12/12-11/15, $300k.
- Microfluidics/SERS for real-time detection of hazardous chemicals, ARO, 12/12-11/15, $600k.
- Titanium MEMS for thermal ground planes, NSA, 8/12 – 8/13. $300k.
- High-throughput screening, sorting and enrichment of oleaginous algae using microfluidics and single-cell Raman Spectroscopy, ARO, 12/11 – 11/12, $100k.
- Interfacial Microfluidics/SERS for high sensitivity detection using aptamer-functionalized SERS active systems, ARO, 12/11 – 11/12, $200k.
- High-throughput screening of oleaginous algae using microfluidics, Raman and Fourier transform infrared spectroscopy, ARO, 12/10 – 11/11, $100k
- Digital free-surface microfluidics/SERS for high sensitivity detection of biological & chemical agents, ARO, 12/10 – 11/11, $200k.
- Free-Surface Microfluidics/SERS for high sensitivity detection of biological and chemical agents, ARO, 12/09 – 11/10, $200k.
- Detection of Airborne Explosives with Ultra-high Sensitivity and Specificity, ARO, 4/09 – 8/12, $2100k.
- SERS Detection for Explosives Vapor, DARPA, 4/09 – 8/10, $500k (PI)
- Ti-Based Thermal Ground Planes, DARPA, 4/08- present, $1750k (PI)
- Development of a Portable DNA Sensor, ARO, 5/05 – 5/08, $2,100,000 (co-PI)
- NIRT: Titanium-Based Biomolecular Manipulation Tools, NSF, 8/04 – 7/08, $1,000,000 (PI)
- Surface-Fluid Interactions in Micro- and Nano-Scale Channels, AFOSR, 1/04 – 12/06, $390,856 (PI)

- AC Electrokinetic Enhancement of Bio-Sensor Performance, ARO – Institute for Collaborative Biotechnology, 9/03 – 1/07, $251,780 (PI)
- Super-hydrophobic Surfaces in Nanochannels, Los Alamos National Lab, 1/04 – 12/04, $100,000 (co-PI)
- An Integrated Tunable Laser Cavity Sensor for Immunoassay Analysis and Molecular Diagnostics, DARPA, 7/00 – 6/04, $1,500,000 (PI)
- ITR/ACS: Computational Infrastructure for Microfluidic Systems with Applications to Biotechnology, NSF, 9/00 – 8/04, $2,900,000 (Co-PI)
- Experimental Analysis of Dielectrophoresis in Microchannels, DARPA / Stanford, 7/00 – 3/04, $185,000 (PI)
- Equipment Grant for Micro Mixing, NSF, 10/99 – 9/01, $105,000 (Co-PI)
- MEMCAD software donation, Microcosym, 9/99 – 9/00, $70,000 (commercial value) (PI)
- Fluid Mechanics of Microscale Engineering Systems, NSF Career Award, 7/98 – 6/04, $225,000 (PI)
- Optical Diagnostic Techniques for Micro-Mixing Devices, DARPA / UIUC, 7/98 – 6/01, $191,807 (PI)
- Development of Micro-Resolution PIV and Analysis of Microthrusters for Small-Scale Aircraft and Spacecraft, AFOSR, 7/97 – 6/00, $313,001 (PI)
- Velocimetry to Microfluidic Devices for Space Exploration, Jet Propulsion Laboratory, 1/98 – 12/99, $63,000 (PI)

Minor Grants and Contracts:

- Microfluidics for Antibiotic Detection, 3M, 3/14-present, $10,000
- Microfluidic Genetic Diagnostics, Tamarisc, 1/06 – 10/06, $2,000
- Fluid Mechanics Research, Ford Motor Company, 9/96 - present, $30,000
- Microfluidics Research, Seiko-Epson, 9/98 – present, $4,300
- PIV Analysis of SEA-JET Nozzles, Seiko-Epson, 10/98 – 3/99, $23,809
- Support for the Third International Workshop on PIV, NSF, 1/99 – 12/99, $10,000
- Support for the Third International Workshop on PIV, NASA, 1/99 – 12/99, $10,000
- Support for the Third International Workshop on PIV, ONR, 1/99 – 12/99, $5,000
- Support for the Third International Workshop on PIV, Ford Motor Company, 1/99 – present, $3,500
- Fluid Mechanics for Microscale Systems, Ford Motor Company, 9/99 – present, $10,000

Invited Seminar Presentations:

- COMSOL Webinar, April 23, 2015.
- Lab on a Chip Microarrays, San Diego, CA, Sept. 19, 2014.
- Washington University, St Louis, MO, June 25, 2014.
- 3M, Inc., Minneapolis, MN, Aug. 22, 2013.
- 10th International Symposium on Particle Image Velocimetry, July 2, 2013.
- ASME Congress Keynote, San Diego, CA, Nov. 19, 2013.
- DARPA Insertion Conference, Adelphi, MD, Sept. 18, 2013.
- Cottage Hospital, Santa Barbara, CA, July 19, 2013.
- Gordon Conference: Microfluidics, Physics & Chemistry, June 9 – 14, 2013.
- Mechanical Engineering Seminar, UCSB, May 6, 2013.
- MLT Seminar Series, Massachusetts Institute of Technology, April 9, 2013.
- Invenios, Santa Barbara, CA, May 24, 2013.
- MF-4 Fourth Microfluidics Consortium, UCSB, Feb. 1, 2013.
- Mechanical Engineering Seminar, UCR, Riverside, CA, Jan. 24, 2013.
- Eastern Analytical Symposium, Somerset, NJ, Nov. 15, 2011.
- NNIN/C Michigan Symposium: Advanced Modeling and Simulation of NEMS/MEMS and Nano/Microfluidic Devices, Ann Arbor, MI, April 19 – 20, 2011.
- Raytheon, El Segundo, CA, Jan. 21, 2011.
- International Symposium on Micro/Nano Flow Measurement Techinques – Horiba International Science Conference, Tokyo, Sept 20-22, 2010.
- 8th International Conference on PIV, Melbourne, Australia, 2009
- Arizona State University, Tempe, AZ, 2008
- University of Padua, Padua, Italy, 2008
- International Centre for Mechanical Sciences (CISM), Udine, Italy, 2008
- ARL-SEDD, Adelphi, MD, 2008

- ECBC, Edgewood, MD, 2008
- CERDEC-NVESB, Belvoir, VA, 2008
- Technical University of Denmark, Copenhagen, Denmark, 2008
- Army Science Conference, ICB, Santa Barbara, CA, 2008
- California Institute of Technology, Pasadena, CA, 2007
- Agilent Technologies, Santa Clara, CA, 2007
- SRI, Menlo Park, CA, 2007
- Univ. of Penn, Philadephia, PA, 2006
- Lisbon, Portugal, 2006
- DICP, Dalian, China, 2006
- Tsinghua University, China, 2006
- Chinese Institute of Non-linear Mechanics, Bejing, China, 2006
- 1st IEEE NEMS Conference, Zhuhai, China, 2006
- 1st Comsol Multiphysics Users Conference, Boston, MA, 2005
- Harvard University, Cambridge, MA, 2005.
- 6th International Conference on Particle Image Velocimetry, Pasadena, CA, 2005
- Wright Patterson Airforce Base, Dayton, OH, 2005.
- Center for Tribology Research, Inc., Campbell, CA, 2005.
- Technical University of Delft, The Netherlands, 2005.
- Stanford University, Stanford, CA, 2004
- University of Florida, Gainesville, FL, 2004
- Workshop for BioSensors, Army Research Office, Rayleigh, NC, 2004
- Adelphi Laboratory Center, US Army Research Laboratory, Adelphi, MD, 2004
- International Symposium on Micro and NanoTechnology ISMNT-1, Honolulu, HI, 2004
- Diagnostics Product Corporation, Los Angeles, CA, 2004
- Association of Laboratory Automation, San Jose, CA, 2004
- Department of Mechanical & Aerospace Engineering, UCLA, Westwood, CA, 2003
- Thermal Systems Incorporated, Bay Area, CA, 2003
- Microfluidics History, Theory and Applications, International Centre for Mechanical Sciences, Udine, Italy, 2003.
- National Institutes of Health, Rockville, MD, 2003
- American Society of Mechanical Engineers – Summer Meeting, Honolulu, HI, 2003.
- National Institute of Standards and Technology, Gathersburg, MD, 2003
- Advances in Biological Diagnostics and Medical Applications, Knowledge Foundation, San Jose, CA, 2003
- AFOSR Workshop on Microfluidics, University of Southern California, Los Angeles, CA, 2003
- Nanomedicine Technology, Cambridge Healthtech Conference, Boston, MA, 2003
- Department of Mechanical Engineering, University of Ohio, Columbus, OH, 2003
- Euro PIV Workshop, Zaragoza, Spain, 2003
- California Nanosystems Institute, UCSB, Santa Barbara, CA, 2003
- Department of Aerospace Engineering, University of Minnesota, Minneapolis, MN, 2003
- American Institute of Aeronautics and Astronautics – Winter Meeting, Reno, ND, 2003
- DLR, Göttingen, Germany, 2002
- American Institute of Chemical Engineers, Indianapolis, IN, 2002
- SBCOMM – US ARMY, Aberdeen Proving Grounds, MD, 2002
- BioMEMS & Biomedical Nanotech World, Columbus, OH, 2002
- International Symposium on Flow Visualization, Kyoto, Japan, 2002
- SEIKEN PIV Workshop, Tokyo, Japan, 2002
- Seoul National University, Seoul, Korea, 2002
- Busan National University, Busan, Korea, 2002
- Kaist University, Daejeon, Korea, 2002
- LG Electronics, Seoul, Korea, 2002
- Dantec Short Course on PIV, Montreal, Canada, 2002
- TSI, Inc., Minneapolis, MN, 2002
- Technical University of Delft, Delft, The Netherlands, 2001

- M.D. Anderson Cancer Research Center, Houston, TX, 2001
- University of Michigan, Ann Arbor, MI, 2001.
- AIAA Aerospace Sciences Meeting, Reno, NV, 2001
- Purdue University, West Lafayette, IN, 2000.
- University of Houston, Houston, TX, 1999
- University of Illinois, Urbana, IL, 1999
- ASME / JSME Fluid Dynamics Meeting, San Francisco, CA, 1999
- DOD-Wide MEMS Meeting, Salt Lake City, UT, 1999
- AIAA Fluid Dynamics Conference, Norfolk, VA, 1999
- Small Talk 99 Conference, San Diego, CA, 1999
- Epson Corporation, Matsumoto, Japan, 1999
- University of California, Santa Barbara, 1999
- Bay Area MEMS Journal Club, Santa Clara, CA, 1999
- University of California, Santa Barbara, CA, 1999
- Stanford University, Stanford, CA, 1998
- Motorola Corporation, Tempe, AZ, 1998
- Epson Corporation, Matsumoto, Japan, 1998
- University of Southern California, Los Angeles, CA, 1998
- Lawrence Livermore National Laboratory, Livermore, CA, 1997
- Johnson Space Center - NASA, Houston, TX, 1997
- University of California, San Diego, CA, 1996
- The Aerospace Corporation, El Segundo, CA, 1996
- University of California, Santa Barbara, CA, 1996
- Ford Motor Company, Dearborn, MI, 1995
- University of Maryland, College Park, MD, 1994
- Stanford University, Palo Alto, CA, 1994
- Imperial College, London, UK, 1994
- DLR, Göttingen, Germany, 1994
- Delft University of Technology, Delft, The Netherlands, 1994
- The Technical University of Denmark, Charlottenlund, Denmark, 1994
- Illinois Institute of Technology, Chicago, IL, 1994
- University of Illinois, Urbana, IL, 1994
- Army Research Laboratory, Aberdeen, MA, 1994
- NASA Langley, Hampton, VA, 1993
- University of Illinois, Urbana, IL, 1992
- TSI, Inc., Minneapolis, MN, 1992

Patents:

C. D. Meinhart, J. G. Santiago, S. T. Wereley, and R. J. Adrian. Micron resolution particle image velocimeter, Patent No. 6,653,651 B1 Issued Nov. 25, 2003.

C. D. Meinhart, L. Coldren, & T. Stultz. Integrated Sensor. Patent No. 6,899,849, Issued May 31, 2005.

C. D. Meinhart, J. G. Santiago, S. T. Wereley, and R. J. Adrian. Depth-of-field micron resolution velocimetry with pulsed images of injected solid particles. Patent No. 7,057,198, June 6, 2006.

C. D. Meinhart, B. Piorek, S. J. Lee. M. Moskovits, Sanjoy Banerjee, J. G. Santiago. Device and methods of detection of airborne agents. Patent No. US 8,017,408 B2, Issued Sept. 13, 2011.

C. D. Meinhart, B. Piorek, S. J. Lee. M. Moskovits, Sanjoy Banerjee, J. G. Santiago. Device and methods of detection of airborne agents. Patent No. US 8,247,238 B2, Issued Aug. 21, 2012.

C. D. Meinhart, B. Piorek, S. J. Lee. M. Moskovits, Sanjoy Banerjee, J. G. Santiago. Device and methods of detection of airborne agents. Patent No. US 8,431,409 B2, Issued April 30, 2013.

N.C. MacDonald, **C.D. Meinhart,** C. Ding, P. Bozorgi, G. Soni, B.D. Piorek. Titanium-based thermal ground plane. Patent No. 8807203. Issued Aug. 19, 2014.

B. D. Piorek, **C.D. Meinhart**, S. J. Lee, SERS devices for the remote analysis of analytes. Patent No. 8917389. Issued Dec. 23, 2014.

B. D. Piorek, **C.D. Meinhart,** S.J. Lee. Methods and apparatus for transport of airborne molecules using an active cyclical vapor/liquid exchange, Patent No. 8792095, Issued July 29, 2014.

C. D. Meinhart, B. Piorek, S. J. Lee. M. Moskovits, Sanjoy Banerjee, J. G. Santiago. Device and methods of detection of airborne agents. Patent No. US 9,097,676 B2, Issued Aug. 5, 2015.

S. J. Lee, B.D. Piorek**, C.D. Meinhart**. Nano/micro-droplets for the detection of analytes. Patent No. 9036144, Issued May 19, 2015.

C. D. Meinhart, B. Piorek, S. J. Lee. M. Moskovits, Sanjoy Banerjee, J. G. Santiago. Device and methods of detection of airborne agents. Patent No. US 9,719,930 B2, Issued Aug. 1, 2017.

N.C. MacDonald, **C.D. Meinhart,** C. Ding, P. Bozorgi, G. Soni, B.D. Piorek. Titanium-based thermal ground plane. Patent No. 10,309,728 B2. Issued June 4, 2019.

P. Bozorgi and **C.D. Meinhart**. High Performance Two-Phase Cooling Apparatus. US Patent No. 10,458,719 B2, Oct. 29, 2019.

C. D. Meinhart, B. Piorek, N. Judy, Microfluidic-based Apparatus and Method for Vaporization of Liquids, US Patent No. 10,502,409 B2, Dec. 10.2019.

C. D. Meinhart, B. Piorek, N. Judy, Microfluidic-based Apparatus and Method for Vaporization of Liquids, China (PRC) Patent No. ZL201580056901.5, Grant Dec. 18, 2019.

C. D. Meinhart, B. Piorek, N. Judy, Microfluidic-based Apparatus and Method for Vaporization of Liquids, US Patent No. 10,612,770, April. 7, 2020.

C. D. Meinhart, B. Piorek, N. Judy, Microfluidic-based Apparatus and Method for Vaporization of Liquids, Japan Patent No.6748075, Grant Aug. 11, 2020.

Archival Publications:

Melchert, D.S., Tahmasebipour, A., Liu, X., Mancini, J., Moran, B., Giera, B., Joshipura, I.D., Shusteff, M., **Meinhart, C. D.**, Cobb, C.L., Spadaccini, C., Gianola, D.S., Begley, M.R., 2022. Anisotropic Thermally Conductive Composites Enabled by Acoustophoresis and Stereolithography. Advanced Functional Materials. dio: 10.1002/adfm.202201687.

Tahmasebipour, A., Begley, M., **Meinhart, C. D.** Acoustophoresis of a resonant elastic microparticle in a viscous fluid medium. J. of the Acoustical Society of America, 151, 3083 (2022) doi:10.1121/10.0010418.

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