

BIOGRAPHICAL SKETCH

NAME Moon, Jon Kenneth		POSITION TITLE President, MEI Research, Ltd	
eRA COMMONS USER NAME jkmoon			
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Massachusetts Institute of Technology, Cambridge, MA	BS	1981	Mechanical Engineering
The University of Texas, Austin, TX	MS	1986	Biomedical Engineering
The University of Texas, Austin, TX	PhD	1992	Biomedical Engineering
United States Patent Office, Alexandria, VA	Registered Agent	2002	Patent Law

Jon Moon is a biomedical engineer with more than fifteen years of academic research interspersed with sixteen years in industry developing and commercializing medical technologies. The most recent twelve years are entrepreneurial experience, including founding and operating two start-up firms. His research work spans mobile sensing, ophthalmology, exercise physiology, metabolic energy expenditure, artificial life support and a range of physiologic measurement systems.

Professional Positions

- 2009 to Present :: President, MEI Research, Ltd., Edina, MN.
Founded [MEI Research](#), supporting research in energy balance, ecological momentary assessment, context of activity and behavior management. MEI provides engineering services in metabolic measurement instrumentation, and systems for mobile technologies and data management.
- 2004 to 2009 :: Chief Technology Officer, Devicix, LLC., Eden Prairie, MN.
Founding partner and CTO of [Devicix, LLC](#), design engineering to translate research concepts into commercial medical products for individual inventors and established companies.
- 2001 to 2004 :: Principal Scientist, Acist Medical Systems, Inc, Eden Prairie, MN.
Directed advanced technologies research and managed intellectual property.
- 1998 to 2001 :: Engineering Manager, Nemoto Medical US, Inc, Newport Beach, CA.
Directed 510(k) approval, assembly, safety testing and training for introduction of a radiopaque contrast media injector for CT diagnostic medical procedures to the US market.
- 1996 to 1998 :: Special Research Fellow, Department of Anesthesiology, Kumamoto University School of Medicine, Kumamoto, Japan.
Designed and tested artificial blood oxygenators and heaters. Conducted research in extracorporeal life support systems and therapeutic hypothermia.
- 1992 to 1996 :: Instructor, Pediatrics, Baylor College of Medicine, Houston, TX.
Research in extracorporeal life support, heart rate variability analysis and measurement of human energy expenditure with calorimeters and ambulatory monitoring in infants and adults.
- 1986 to 1992 :: Electrical Engineer, Pediatrics, Baylor College of Medicine, Houston, TX.
Designed, built and conducted research with whole-body respiration calorimeters to measure energy expended by pre-term and term infants, children, adolescents and adults.
- 1981 to 1983 :: Marketing and Product Manager, Intermedics, Inc, Freeport, TX.

Current Professional Societies and Volunteer Activities

- Senior Member, Institute of Electrical and Electronic Engineers (IEEE)
- Fellow, The Obesity Society
- Member, Society for Behavioral Medicine
- ABET Engineering Accreditation Commission Program Evaluator (2008 – 2016) and BMES Accreditation Activity Committee (2016)

BIOGRAPHICAL SKETCH :: Jon K. Moon (continued)

- Industrial Advisory Board, Department of Biomedical Engineering, University of Minnesota (2009 – 2016),
- City of Edina Water Quality Working Group (2011 – 2016) and election judge (2000 – 2016)

Reviewed Publications

1. Oreskovic ND, Huang TT, Moon J. "[Integrating mHealth and systems science: A combination approach to prevent and treat chronic health conditions](#)", JMIR mHealth uHealth 2015;3(2):e62.
2. Casperson SL, Sieling J, Moon J, Johnson L, Roemmich J, Whigham L. "[Usability of a mobile phone food record application by adolescents to digitally capture dietary intake in a free-living environment](#)", JMIR mHealth uHealth 2015;3(1):e30.
3. Bond DS, Thomas JG, Raynor HA, Moon J, Sieling J, Trautvetter J, Leblond T, Wing RR. "[B-MOBILE - A Smartphone-Based Intervention to Reduce Sedentary Time in Overweight/Obese Individuals: A Within-Subjects Experimental Trial](#)", PLoS One. 9(6):e100821, 2014.
4. Brychta R, Wohlers E, Moon J, Chen K. "[Energy expenditure: measurement of human metabolism](#)", IEEE Eng Med Biol Mag, 29(1):42-7, 2010.
5. Moon JK, Barden CM, Wohlers EM. "[Data Upload Capability of 3G Mobile Phones](#)", Conf Proc IEEE Eng Med Biol Soc. 1: 705-708, 2009.
6. Wohlers EM, Sirard JR, Barden CM, Moon JK. "[Smart Phones are Useful for Food Intake and Physical Activity Surveys](#)", Conf Proc IEEE Eng Med Biol Soc. 1: 5183-5186, 2009.
7. Ao H, Tanimoto H, Yoshitake A, Moon JK, and Terasaki H. "Long-term mild hypothermia with extracorporeal lung and heart assist improves survival from prolonged cardiac arrest in dogs", Resuscitation 48(2): 163-74, 2001.
8. Ao H, Moon JK, Tashiro M, and Terasaki H. "Delayed platelet dysfunction in prolonged induced canine hypothermia", Resuscitation 51(1): 83-90, 2001.
9. Ao H, Moon JK, Tanimoto H, Sakanashi Y and Terasaki H. "[Jugular vein temperature reflects brain temperature during hypothermia](#)", Resuscitation 45: 111-118, 2000.
10. Ao H, Tajiri A, Yanagi F, Okamoto T, Masafumi T, Sakanashi Y, Tanimoto H, Moon JK and Terasaki H. "Heparin bonding of the extracorporeal circuit reduces thrombosis during prolonged lung assist in goats", ASAIO J 46: 723-729, 2000.
11. Butte NF, Hopkinson JM, Mehta N, Moon JK and Smith EO "Adjustments in energy expenditure and substrate utilization during late pregnancy and lactation", Am J Clin Nutr 69: 299-307, 1999.
12. Bickel DR, Verklan MT and Moon J. "Detection of Anomalous Diffusion using Confidence Intervals of the Scaling Exponent with Application to Preterm Neonatal Heart Rate Variability", Physical Review E 58(5): 6440-6448, 1998.
13. Moon JK, Evey LW, Moon YS, Gest AL, Gomez MR and Wearden ME. "Nitric oxide supplied from a 10% source provides inhaled therapy without lowering inspired oxygen fraction", Biomed Instr Tech 31(2): 164-8, 1997.
14. Hsu HW, Butte NF, Wong WW, Moon JK, Ellis KJ, Klein PD and Moise KJ. "Oxidative metabolism in insulin-treated gestational diabetes mellitus", Am J Physiol 272: E1099-E1107, 1997.
15. Moon JK. "Gas transport through microporous hollow fibers." Proc. 19th IEEE/EMBS, 2586-2588, 1997.
16. Moon JK and Butte NF. "[Combined heart rate and activity improve estimates of oxygen consumption and carbon dioxide production rates](#)", J Appl Physiol 81(4): 1754-1761, 1996.
17. Moon YS, Ohtsubo S, Gomez MR, Moon JK, Nosé Y. "Comparison of centrifugal and roller pump hemolysis rates at low flow", Artif Organs 20(6): 579-81, 1996.
18. Moon JK, Gomez MR and Hansen TN. "A lung disease model to predict the efficacy of inhaled nitric oxide therapy", Proc. 17th IEEE/EMBS, 6: 1531-1532, 1995.
19. Moon JK. "Prediction of oxygen consumption rates from heart interval mean and variance", Proc. 17th IEEE/EMBS, 1: 725-726, 1995.
20. Moon JK, Vohra FA, Valerio Jimenez OS, Puyau MR, Butte NF. "[Closed-loop control of carbon dioxide concentration and pressure improves response of room respiration calorimeters](#)", J Nutr 125: 220-228, 1995.

BIOGRAPHICAL SKETCH :: Jon K. Moon (continued)

21. Gomez MR, Moon JK, Moreno JA. "Delivery of inhaled nitric oxide from a 10% source by gas phase titration", Proc. 17th IEEE/EMBS, 6(2):1675-1676, 1995.
22. Butte NF, Moon JK, Wong WW, Hopkinson JM, Smith EO. "Energy requirements from infancy to adulthood", Am J Clin Nutr, 62: 1047S-1052S, 1995.
23. Moon YS, Ohtsubo S, Gomez MR, Moon JK, Nose Y. "Centrifugal pumps may have lower hemolysis rates than roller pumps at low flow". Proc. 17th IEEE/EMBS, 6(1):671-672, 1995.
24. Moon JK, Coggan AR, Hopper MK, Baker LE, Coyle EF. "Stroke volume measurement during supine and upright exercise by impedance cardiography", Ann Biomed Eng 22: 514-523, 1994.
25. Moon JK, Jensen CL, Butte NF. "Fast response whole-body indirect calorimeters for infants", J Appl Physiol 74(1): 476-484, 1993.
26. Valerio Jimenez OS, Moon JK, Jensen CL, Vohra FA and Sheng HP. "Pre-term infant volume measurements by acoustic plethysmography", J Biomed Eng 15(1): 91-98, 1993.
27. Jensen CL, Butte NF, Wong WW, Moon JK. "Determining energy expenditure in preterm infants: comparison of $^2\text{H}_2^{18}\text{O}$ method and indirect calorimetry", Am J Physiol. 263(3 Pt 2): R685-92, 1992.
28. Butte NF, Jensen CL, Moon JK, Glaze DG, Frost JD Jr. "Sleep organization and energy expenditure of breast-fed and formula-fed infants", Pediatr Res. 32(5): 514-9, 1992.
29. Moon JK, Jensen CL, Butte NF. "Application of a Fast Response Calorimeter to Preterm Infant Metabolism", Proc. 13th IEEE/EMBS, pp. 2346-2347, 1991.
30. Moon JK, Coggan AR, Hemmert MK, Baker LE, Coyle EF. "Blood Resistivity Changes During Upright and Supine Exercise", Proc. 13th IEEE/EMBS, pp. 821-822, 1991.

Recent Conference Contributions

1. Moon, J. "Applying Sensor, Survey and Resource Data to Healthy Behavior Change" Oral presentation at IEEE/EMBC Annual Conference in a symposium on, "Integrated Sensor and Informatics for Personalized Obesity Care and Prevention", 2015.
2. Moon, J; Sieling, J; Francelino-Tomita, K; Schenk, T; Woolford, S. "[Delivering Individualized Food Messages by Location](#)", IEEE/EMBC Annual Conference, 2015
3. Moon, J. "[Open Platforms to Sustain and Reuse Component Contributions](#)", Invited presentation, ICAMPAM 2015, Limerick, Ireland.
4. Sieling, J; Moon, J; Glynn, T; Barnett, N. "[An Implementation of Contingency Features to Deliver Random EMA Surveys in a Smartphone Application](#)", Society for Behavioral Medicine 2015.
5. Moon, J; Sieling, J; Iverson, ER; McClain, J. "[mHealth Software as a Service for Behavioral and Clinical Research](#)", ObesityWeek 32nd Annual Scientific Meeting, 2014.
6. Sieling, J; Wohlers-Kariesch, EM; Iverson ER; Moon, J; Brychta, R, Chen, K. "[Common Platform to Store and Process Calorimeter Data with Contributed Algorithms](#)", RACMEM, 2014.
7. Moon, J; Wohlers-Kariesch, EM; Bock, CP; Huff, J. "[Response of Traceable Whole Body Calorimeters to Dynamic Gas Infusions](#)", RACMEM, 2014.
8. Bock, CP; Wohlers-Kariesch, EM; Moon, J; Smith, SR. "[Comparison of Maximal Oxygen Uptake between Whole Body and Cart Calorimetry](#)", RACMEM, 2014.
9. Moon, J. "Common Calibration Applied to Four Calorimeter Laboratories", invited talk, RACMEM 2014.
10. Moon, J; Sieling, J; Bond, D; Thomas, G. "[Coordinating Sensor and Subjective Data in mHealth Studies](#)", ObesityWeek 31st Annual Scientific Meeting:S50, 2013.
11. Moon, J. "Smartphones as a data collection and intervention instrument", Invited Workshop presentation, International Society for Behavioral Nutrition and Physical Activity (ISBNPA) 2012 Annual Conference.
12. Moon, J. "Metrology in Metabolic Measurements", invited talk, Wireless Health 2012.
13. Whitaker, L; Wohlers, E; Shoemaker, A; Buchowski, M; Moon, J. "Improving Accuracy of Energy Expenditure Measurements from Room Calorimetry in Youth", Obesity 30th Annual Scientific Meeting:S13, 2012.

BIOGRAPHICAL SKETCH :: Jon K. Moon (continued)

C. Supported Research

Integrating Voluntary Geographic Information and Public Data

Funding Source: NIH/NCI SBIR Phase I / Contract HHSN261201400034C
Role: Principal Investigator Amount: \$199,769 Period: 2014 – 2015

Location Initiated Individualized Texts for African American Adolescent Health (LIITA3H)

Funding Source: NIH/ NIMHD STTR Phase I 1R41MD008840-01
Role: Investigator Amount: \$149,940 Period: 2014 – 2016

Cross Platform Mobile EMA – supplement to Unified Platform for Managing Objective Behavioral Data

Funding Source: NIH / NCI SBIR Phase II / Contract HHSN261201300084C
Role: Principal Investigator Amount: \$250,000 Period: 2014 – 2015

Unified Platform for Managing Objective Behavioral Data

Funding Source: NIH / NCI SBIR Phase II / Contract HHSN261201300084C
Role: Principal Investigator Amount: \$999,529 Period: 2013 – 2015

Unified Platform for Managing Objective Behavioral Data

Funding Source: NIH / NCI SBIR Phase I / Contract HHSN261201100058C
Role: Principal Investigator Amount: \$199,554 Period: 2011 – 2012

Systems Engineering Design of Room Respiration Calorimeters

Funding Source: NIH/NCRR SBIR Phase I 1R43RR026200-01
Role: Principal Investigator Amount: \$357,158 Period: 2009 – 2011

Free-living Energy Balance Assessment and Management in Close to Real Time

Funding Source: USDA/NIFA SBIR Phase II 2009-33610-20316
Role: Principal Investigator Amount: \$345,276 Period: 2009 – 2011

Cell Phone Location Monitor and User Report Platform for Diet and Energy Balance

Funding Source: USDA/NIFA SBIR Phase I 2008-33610-18902
Role: Principal Investigator Amount: \$79,815 Period: 2008 – 2009

Pressurized gas transport for intravascular oxygenation

Funding Source: NSF, Japan Society for the Promotion of Science P96136
Role: Postdoctoral Fellowship Amount: ¥6,680,000 Period: 1996 – 1998

Miniature intravascular oxygenator

Funding Source: Japan Society for the Promotion of Science
Role: Primary researcher Amount: ¥2,000,000 Period: 1996 – 1998

Free living energy expenditure predicted from combined heart rate, heart rate variability and physical activity

Funding Source: USDA Young Investigator award 1R43HL080767-01
Role: Principal Investigator Amount: \$72,000 Period: 1994 – 1996

D. Patents

8,758,294 Balloon inflation device
8,554,802 System to dynamically collect and synchronize data with mobile devices
7,980,141 Wearable position or motion sensing systems or methods
7,047,994 Stopcocks and methods of manufacture thereof
6,880,808 Gamma-stable high pressure stopcock