Curriculum Vitae

David W. Hahn, PhD
Craig M. Berge Dean – College of Engineering
University of Arizona
Tucson, AZ 85721

Email: dwhahn@arizona.edu
Office: (520) 621-6595

1. Educational Background

Louisiana State University	Mechanical Engineering	PhD 1992
Louisiana State University	Mechanical Engineering	BSME 1986

2. Academic Employment

University of Arizona	Craig M. Berge Dean – College of Engineering	July 2019 – Present
	Professor and Eminent Scholar – Aerospace & Mechanical Dept.	July 2019 – Present
University of Florida	Department Chair – Mechanical & Aerospace Engineering (MAE)	June 2011 – May 2019
University of Florida	Affiliate Professor – Center for Gender, Sexualities, and Women's Studies and Research	September 2015 – June 2019
University of Florida	Affiliate Professor – Materials Science & Engineering Dept.	July 2013 – June 2019
University of Florida	Associate Chair for Academics - MAE	Aug. 2008 – June 2011
University of Florida	Professor - MAE	Aug. 2007 – June 2019
University of Florida	Associate Professor - MAE	Aug. 2003 – Aug. 2007
University of Florida	Assistant Professor - MAE	Aug. 1998 – Aug. 2003

3. Professional Training and Employment

Sandia National Laboratories *Livermore, CA*	Member of Technical Staff	1995 – 1998
Sandia National Laboratories *Livermore, CA*	Post-Doctoral Researcher	Sept. 1994 – 1995
US FDA CDRH *Rockville, MD*	NRC Post-Doctoral Associate FDA Electro-Optics Branch	Jan. 1993 – Aug. 1994

4. Areas of Specialization

Specialization includes the areas of the thermal sciences and laser-based diagnostics, including biophotonics, spectroscopy, general laser-material interactions, and renewable solar energy storage. Teaching interests are in the areas of heat transfer, conduction heat transfer, combustion, and laser-based diagnostics.

5. Teaching Advising, Instructional Accomplishments, and Mentorship

Teaching activities are concentrated in the area of thermal sciences and general engineering. Courses include: (1) EML 4140 Heat Transfer; (2) EML 4410 Combustion Engineering; (3) EML 6154 Conduction Heat Transfer; (4) EML 5131 Combustion; (5) EML 6934 and EGM 6006 Laser-Based Diagnostics; and (6) EML 2920 Professional Orientation, a required undergraduate course. In addition to teaching and supervision of graduate students, I have been active at UF and UA in working directly with undergraduate students through the following programs, including oversight and guidance to all student society leadership in the College of Engineering:

- Student Society Leadership
- Undergraduate Scholars Program
- University Honors Program
- Independent study and summer research

6. Honors and Awards

1. Fellow - American Society of Mechanical Engineers (ASME)
2. Fellow – The Optical Society (OSA)
3. Fellow - Society for Applied Spectroscopy (SAS)
4. Slovak-Czech Spectroscopy Society – *Ionnes Marcus Marci Medal* (2019)
5. UF SWE Chapter *2016-2017 Outstanding Support of Women in Engineering Award*
6. Louisiana State University, Mechanical & Industrial Engineering Dept., *Alumni Achievement Award* (2014)
7. Society for Applied Spectroscopy, *2011 Lester W. Strock Award*
8. College of Engineering *2009-2010 Advisor/Mentor of the Year Award*
9. College of Engineering *2007-2008 Teacher/Scholar of the Year Award*
10. Sandia National Laboratories *Award for Technical Excellence* (1998)
11. Louisiana Engineering Foundation *Vincent A. Forte Graduate Fellowship* (1987-1988)

7. Contracts and Grants

Over $28M in funding as PI or co-PI from: NSF, US DoD, US DOE, US ARPA-E, US DHS, US Office of Naval Research, US Air Force Research Laboratory, Sandia National Laboratories, NASA, Siemens Power Generation, Siemens Building Systems, Alcon, Ocean Optics, Florida Department of Environmental Protection, UF Research Foundation, Florida Energy Systems Consortium, Mosaic Corporation, the Florida High Technology Consortium, Arizona Chamber of Commerce, and the Salt River Project.

8. Teaching Evaluations (Most recent courses at University of Florida)

EML 2920: MAE Professional Orientation (*Undergraduate required*)
EML 4410: Combustion Engineering (*Undergraduate elective*).
EML 4140: Heat Transfer (*Undergraduate required*).
EML 5131: Combustion (*Graduate elective*).
EML 6154: Conduction Heat Transfer (*Graduate core course*).
EML 6934: Special Topics: Laser-based Diagnostics (*Graduate elective*).
EGM 6006: Laser-based Diagnostics (*Graduate elective*).

Semester	***Course***	***Enrollment***	***Overall Instructor (Q10)***
Spring 2017	EML 2920*	265	4.45 (Scale of 1 to 5: 5 = highest)
Spring 2016	EML 2920*	164	4.50
Fall 2011	EML 6154	66	4.89
Fall 2010	EML 6154	64	4.92
Spring 2010	EGM 6006	23	4.85
Fall 2009	EML 6154	40	4.86
Spring 2009	EML 4140	156	4.32
Fall 2008	EML 6154	31	5.00
Spring 2008	EGM 6006	19	4.77
Fall 2007	EML 6154	26	4.79
Spring 2007	EML 4140	145	4.80
Fall 2006	EML 6154	29	4.92
		Avg.	**4.76 (Dept. mean = 4.1~4.2)**

**Co-taught with Prof. Chelsey Simmons*

9. Graduate Committee Activities

a. PhD Supervision:

PhD Chair: 20 graduated as PhD Chair & 2 as PhD co-Chair

b. Other Graduate Supervision:

Master's Level Committee Role: 38 graduated as MS Chair/Co-chair (18 thesis Chair)
35 graduated or mentored as MS Committee Member

PhD Level Committee Role: 33 graduated as External Member
58 graduated or mentored as Committee Member

10. Patents and Copyrights (*11 total US Patents issued, 3 Licensed/Optioned, 1 US Patents pending*)

Method and apparatus to laser ablation laser-induced breakdown spectroscopy
US Patent Number: 8,319,964
Issued: November 27, 2012.
David W. Hahn.

Differential laser-induced perturbation for bioimaging and chemical sensing
US Patent Number: 8,939,966
Issued: January 27, 2015.
David W. Hahn.

System and method for real-time feedback during laser refractive surgery
US Patent Number: 7,207,983
Issued: April 24, 2007
D.W. Hahn and B.T. Fisher.

Rodent cage to accommodate monitoring devices
U.S. Patent Number: 7,497,187
Issued: March 3, 2009
H.A. Ingley, D.W. Hahn and A.H. Battles.

Microfield interface device for monitoring animal cage environments
UF Patent Number: 6,998,980
Issued: February 14, 2006
H.A. Ingley, D.W. Hahn and A.H. Battles.

Method for improving instrument response
U.S. Patent Number: 6,061,641
Issued: May 9, 2000
D.W. Hahn, K.R. Hencken, H.A. Johnsen and W.L. Flower.

Flame stabilizer for stagnation flow reactor
U.S. Patent Number: 5,951,768
Issued: Sept. 14, 1999
D.W. Hahn and C.F. Edwards.

Medical implant composition
U.S. Patent Number: 5,827,904
Issued: Oct. 27, 1998
David W. Hahn.

Method of growing films by flame synthesis using a stagnation-flow reactor
U.S. Patent Number: 5,840,373
Issued: Nov. 24, 1998
D.W. Hahn and C.F. Edwards.

Solar thermochemical reactor and method of manufacture and use thereof
U.S. Patent Number: 10,072,224
Issued: Sept. 11, 2018
J. Klausner, et. al.

11. Scholarly Publications

a. Books, Monographs, and Book Chapters (from a total of 7)

1. D.W. Hahn and M.N. Özişik. *Heat Conduction*, 3rd edition. 718 pages. Wiley and Sons (2012). Google Scholar citations: 939

b. Journal Publications – Top 10 most cited papers from a total of 115+.

- Google Scholar: h-index = 46; total citations > 10,300 (as of 2024)

Hahn, David W.; Omenetto, Nicolo. Laser-Induced Breakdown Spectroscopy (LIBS), Part II: Review of Instrumental and Methodological Approaches to Material Analysis and Applications to Different Fields, *Applied Spectroscopy*, Volume: 66, Pages: 347-419, APR 2012. (1533 citations)

Hahn, David W.; Omenetto, Nicolo. Laser-Induced Breakdown Spectroscopy (LIBS), Part I: Review of Basic Diagnostics and Plasma-Particle Interactions: Still-Challenging Issues Within the Analytical Plasma Community, *Applied Spectroscopy*, Vol: 64, Pages: 335A-366A, DEC 2010. (1073 citations)

Windom, Bret C.; Sawyer, W. G.; Hahn, David W. Raman Spectroscopic Study of MoS2 and MoO3: Applications to Tribological Systems, *Trib. Letters*, Vol: 42, PP: 301-310, JUN 2011. (712 citations)

Hahn, DW; Lunden, MM. Detection and analysis of aerosol particles by laser-induced breakdown spectroscopy, *Aerosol Science & Technology*, Vol: 33, Pages: 30-48, JUL-AUG 2000. (275 citations)

Carranza, JE; Fisher, BT; Yoder, GD; Hahn, DW. On-line analysis of ambient air aerosols using laser-induced breakdown spectroscopy, *Spectrochimica Acta Part B-Atomic Spectroscopy*, Vol: 56, Pages: 851-864, JUN 29 2001. (237 citations)

Porizka, P; Klus, J; Kepes, E; Prochazka, D; Hahn, DW; Kaiser, J. On the utilization of principal component analysis in laser-induced breakdown analysis: a review, *Spectrochimica Acta Part B-Atomic Spectroscopy*, Vol: 148, Pages: 65-82, OCT. 1, 2018. (202 citations)

Hahn, DW; Flower, WL; Hencken, KR. Discrete particle detection and metal emissions monitoring using laser-induced breakdown spectroscopy, *Applied Spectroscopy*, Volume: 51, Pages: 1836-1844, DEC 1997. (193 citations)

Dickrell, PL; Sinnott, SB; Hahn, DW; et al. Frictional anisotropy of oriented carbon nanotube surfaces, *Tribology Letters*, Volume: 18, Pages: 59-62, JAN 2005. (153 citations)

Buckley, SG; Johnsen, HA; Hencken, KR; Hahn, DW. Implementation of laser-induced breakdown spectroscopy as a continuous emissions monitor for toxic metals, *Waste Management*, Vol:20, Pages: 455-462, 2000. (167 citations)

Fisher, BT; Johnsen, HA; Buckley, SG; Hahn, DW. Temporal gating for the optimization of laser-induced breakdown spectroscopy detection and analysis of toxic metals, *Applied Spectroscopy*, Volume: 55, Pages: 1312-1319, OCT 2001. (148 citations)

12. Editor of a Scholarly Journal, Service on an Editorial Advisory Board.

1. Associate Editor: *Applied Spectroscopy* (2009 – 2013)
2. Member of Publications Committee: Society for Applied Spectroscopy (2011 – 2022)
3. Member of Editorial Board: *Spectrochimica Acta Part B,* (2010 – 2018)
4. Member of Editorial Advisory Board: *Applied Spectroscopy*, (2005 – 2020)
5. Guest Editor for *Applied Optics,* feature issue on LIBS, Vol. 42 (2003). (42 manuscripts)

13. University Governance and Service

1. Advisory Board Member, UA Presidential Post-doctoral Fellowship Program – 2023 to present.
2. Member, Board of Directors, UA Applied Research Corporation (UA- ARC) – 2023 to present.
3. Co-organizer, Arizona Initiative on Data & Computing (AIDC) – 2023 to present.
4. Chair of Eller College of Management Dean Search Committee – 2022.
5. Member of UF Director of OTL Search Committee – 2017.
6. Member of UF *ad hoc* Campus Memorial Committee – 2017-2018.
7. Chair of CISE Department Search Committee for Dept. Chair – 2012 & 2014.
8. Chair of COE Operations Advisory Committee – 2013 – 2015.
9. Member of COE Associate Dean Search Committee – 2014.
10. Associate Chair for Academics – MAE: Aug. 2008 – June 2011.
11. UF Senate Council on Scholarship and Research: Aug. 2010 – Aug. 2014.
12. UF Faculty Senator: Aug. 2009 – May 2012.
13. College of Engineering Faculty Council: Aug. 2009 – May 2012.
14. College of Engineering RCM Committee: Jan. 2010 – 2012.
15. Chair of MAE Search Committee: Aug. 2006 – Aug. 2008.
16. Undergraduate advisor for MAE Department: Aug. 2000 – Aug. 2008.
    Advised all ME majors with last name A-B: (~50-60 students).
17. Member of MAE Search Committee: Aug. 2005 – June 2006.
18. Member of MAE Search Committee: Aug. 2003 – May 2004.
19. Member of Ebaugh Chaired Professorship Selection Committee: 2004.
20. Member of the College of Engineering Scholarship Committee: Jan. 2000 – Dec. 2003.

14. Select International Activities

1. Hosted Dr. Pavel Porizka as Fulbright Scholar from Czech Republic, Oct. 2017 – April 2018.
2. Hosted Daniel Diaz from the National University of Colombia (Medellin, Colombia) as Robert S. McNamara World Bank Fellow (2017) and co-Chair of PhD committee.
3. Hosted Dr. Reto Glaus, post-doctoral student from ETH-Zurich, sponsored by the Swiss National Science Foundation, Aug. 2013 – Aug. 2014.
4. External PhD & Habilitation Committee Member: Michael Taschuk, University of Alberta, Canada; Dr. Christophe Dutouquet, University of Orleans, France; S. Sreedhar, University of Hyderabad, India; Daniel Diaz, National University of Colombia (Medellin, Colombia).
5. UF COE point person on collaborative student exchange with Escola Politécnica - University of São Paulo, Sao Paulo, Brazil. Sent first MAE exchange students in Fall 2014.
6. National Science Foundation and German National Science Foundation (DFG) jointly funded collaboration with University of Dortmund and the German Federal Institute for Materials Research and Testing (BAM) in Berlin, Germany.

15. Membership and Activities in the Profession (approximate dates of membership)

1. Fellow, American Society of Mechanical Engineers (ASME), 1992 – present.
2. Fellow, Optical Society of America, Optica (OSA), 1999 – present.
3. Fellow, Society for Applied Spectroscopy (SAS), 2000 – present.
4. Member of Board of Directors, Defensewerx/Doolittle Institute, 2011 – 2019, 2020-2022.
5. Senior Member, International Society for Optics and Photonics (SPIE), 2009 – 2016.
6. Associate Member, American Institute of Aeronautics and Astronautics (AIAA), 2012 – present.
7. Member, American Society for Engineering Education (ASEE), 2011 – present.
8. Life Member, Tau Beta Pi, national engineering honor society, 1985 – present.
9. Member, Pi Tau Sigma, Mechanical Engineering honor society, 1985 – present.