

CORINNE LENGSFELD

Senior Vice Provost for Research and Graduate Education, University of Denver

Dr. Lengsfeld currently serves as the Sr. Vice Provost for Research and Graduate Education. The architect behind the University of Denver's dramatic 17 position climb in rankings last year and facilitating the implementation of differential tuition at the graduate level leading to double digit climbs in graduate students several years in a row. A deeply respected teacher, researcher, administrator, and colleague, Dr. Lengsfeld has been part of the DU community for over 20 years. Previously, she served as the Interim Provost and Executive Vice Chancellor. As a faculty member still engaging in research, she specializes in interdisciplinary research in the meso- and micro-scale fluid systems. Her research has been supported by the National Science Foundation, the Department of Health and Human Services, the Department of Defense, the State of Colorado, Keck Futures, and others. She holds a Ph.D in mechanical engineering from the University of California-Irvine.

Dr. Lengsfeld is wholly committed to supporting students and, most especially, she is renowned for supporting women students in traditionally male-dominated fields such as her own. Throughout her career, 38 percent of her Ph.D students, 50 percent of her MS students, and 54 percent of her undergraduate research assistants were women. She has also served as the director of the K-12 summer outreach program in engineering. Through this program, nearly 3000 students were reached and 34 local STEM educators were trained. Her dedication to research and student success led her to receive the Best Teacher Award (2004) and Best Scholar Award (2007) from the Ritchie School of Engineering and Computer Science, as well as the Robin Morgan Outstanding Woman Award (2012) from the Women's Staff Alliance for Networking & Development and the University Scholar/Teacher of the Year Award in 2012.

PROFESSIONAL EXPERIENCE

University of Denver, Denver, Colorado, USA

Sept. 1999 - Present

Interim Provost and Executive Vice Chancellor

07/2019 – 7/2020

- Worked closely with the chancellor and the board of trustees, and was second to the chancellor in the DU's responsibility structure
- Served as chief academic officer and dean of the faculty, providing leadership and comprehensive administrative responsibility for colleges, schools, divisions, departments, libraries, centers and institutes, faculty, staff and students, and those units that serve the University's academic needs
- Provided strategic planning and develops the annual operating budget in a manner that ensures fiscal stability and supports the ambitious goals and mission of the university
- Responsible for refining, evolving, and driving the strategic plan, DU IMPACT 2025
- Promoted shared governance, collegiality, community, fairness, and respect among administration, faculty, staff, and students
- Direct reports include: 12 Academic Deans, 6 Vice or Associate Provosts, Centers and Institutes and administrative support

Major Accomplishments:

- Developed comprehensive ranking strategy, implementing initiatives that moved USNWR National University Rank from #97 to #80, WSJ/THE #131 to 119
- FY20 research expenditures exceed \$41M
- Lowest tuition increase in 40 years
- Launched campus wide differential graduate tuition and program-based tuition model
- Moved Graduate School of Professional Psychology tenure track faculty to 10-month contracts from 12-month contracts; moving faculty salaries in line with CUPA benchmark
- Analyzed and initiated changes to begin addressing pay equity issues across the University
- Launched faculty summer symposium leading to six initiatives to on-board faculty and nurture leadership skills, professional growth and community among the faculty and department chairs
- Launched a new internal online management provider
- Mandated DEI and inclusive pedagogy training for all faculty and leadership under provost
- Established rigorous and uniform sr. administrator evaluation process

COVID-19 Lead and Point for University:

- Principle investigator for CARES funding = \$4.6M
- Preparation started in January – curricular continuity planning, IT hardware and software upgrading
- Pulled all study abroad students home 10 days before travel restrictions – saving money, faster and safer return
- Moved campus to online and remote work more than a week before state “stay at home” order
- Set up testing methodology for presumptive and isolation protocols before state testing available
- Kept pay checks whole March, April and May for all employees
- Stopped student athlete travel with campus travel creating no inequity
- Refunded all dorm, food, activity and health expenses
- Instituted policies around pass plus/pass/no pass, T&P amendments, grade replacement, suspension of probation and dismissal, added instructional designers and peer trainers for more than 800 faculty in two weeks.
- Lifted 2000 classes in 14 days with 100% compliance, strong instructor and student engagement
- Made sure that all governance bodies (ie. Student/faculty/staff) involved with every policy change leading to 56 townhalls from March 6th to July 15th
- Implemented tight and regular communication among units, senior administration, faculty and staff
- Fiscal year end balanced despite substantive additional expenditures
- Constructed comprehensive Fall return to campus action plan
- FY21 planned with multiple scenarios and contingencies
- Pivotal in ensuring fall enrollment was up 5% in midst of pandemic

Senior Vice Provost for Research and Graduate Education

07/2020 - present

02/2019 – 07/2019

Vice Provost for Research and Graduate Education

10/2017 – 02/2019

Interim Associate Provost for Graduate Studies

07/2017 – 10/2017

Associate Provost for Research

11/2013 – 10/2017

- Serves as the chief research officer and institutional official. The primary advocate for the University's research mission, charged with understanding, celebrating, leading and enhancing all forms of scholarship to foster professional growth of the faculty, advance knowledge, enrich the student experience, and enhance DU's visibility in a positive manner. Advocated to support all areas of research compliance such as human subject protections, laboratory animal protections, biosafety, conflict of interest, responsible conduct of research, and export control.
- Oversees internal support for research and scholarship, the pursuit and management of external grants and contracts, research integrity and protection, intellectual property and technology transfer as well as some multidisciplinary research institutes and core facilities. This included a responsibility to oversee and coordinate University-wide research and scholarship policies and procedures, internal seed funding programs, advising senior leadership on federal policies and regulations, and publicizing research productivity and impact across all forms.
- Leads, advances, implements, and evaluates strategies to grow and expand research and scholarship related to DU's priorities. Fostered, formed, and implemented collaborations among individuals across campus that have a strong likelihood for impact and funding.
- Oversees graduate admissions and enrollment, academic student success, progress and persistence monitoring, and the awarding of degrees. Providing leadership around enrollment strategy, liaising trustee expectations to all units, generated collaboration across the University to leverage enrollment successes.
- Supports the success of graduate students, strategically positioning DU visibly among its peers, the position oversaw many aspects of graduate financial assistance, graduate professional development, marketing /communication and postdoc affairs.
- Served as Dean for the DU/Illiff School of Theology Joint PhD program in religious studies, reversing financial declines and achieving gains for FY18, FY19, FY20.

- During Pandemic remains as one of the critical thought leaders and implementers in the DU COVID response

Major Accomplishments:

- Increased the number of externally funded PIs from 110 to 244 (+48%) in seven years
- Increased externally sponsored research expenditures from \$20M to \$41M (+101%) in five years
- Reversed declining graduate admission trend, increasing deposits by 20% in two years
- Recreated the Office of Intellectual Property and Tech Transfer
- Restored the human subjects protection program
- Over saw the launch of the interdisciplinary research center on Knoebel Institute for Health Aging
- Restored faculty governance boards for Sponsored Programs Academic Research Council and Intellectual Property Council
- Rebranded DU to highlight research, scholarship and creative works
- Owner representative for University in the construction of the Knoebel Institute for Healthy Aging facility (including animal facility), Engineering and Computer Science building and the Administrative Office Building
- Lead the USNWR Ranking Taskforce

COVID Accomplishments:

- Leading residence hall wastewater surveillance program
- Lead for salivary RT-PCR surveillance testing (1000 tests/day)
- Lead for the athletic antigen surveillance program
- Lead for DU backwards contract tracing, outbreak management, transmission evaluation and response
- Leading the DU COVID research database data collection and oversight for faculty use
- Member of the DU Critical Response Team
- Conducted modeling for forecasting cases in the state, city and campus based on pattern recognition and known public health measures
- Led the design of on-campus housing strategy/density etc; Led design of on-campus events to support public health needs and community building; Led design of student transportation and experiential learning programs to support public health needs
- Protocol lead: experiential learning, transportation, field work and internships, research and human subjects, Music and ensembles, student and employee compliance,

Professor , Department of Mechanical and Materials Engineering	09/2012 – Present
Associate Professor , Department of Mechanical and Materials Engineering	09/2005 – 08/2012
Assistant Professor , Department of Engineering	09/1999 – 08/2005

Major Accomplishments:

- ~1240 citations (Google scholar)
- H-index = 20
- >\$5.0 Million in external funding
- 11 PhD Students (27% female)
- 12 MS Students (46% female, 15% Native American)
- 25 Undergraduate research assistants with 2-years+ experience (44% female, 8% Native American, 8% first generation)
- 4 Research Engineers/ Postdocs (25% Latino)

Director Engineering of Extreme Sports Outreach Program,

School of Engineering and Computer Science

05/2007 – 09/2012

- Summer residency outreach program to inspire 14 to 17-year-old students to pursue careers in engineering but served as a professional development course for secondary and high school STEM educators.

- Program reached ~130 students through the on-campus residency program, and 1700+ students exposed to the curriculum through local high schools by the 34 high school STEM educators trained during the summer residency program.
- Student participant demographics included 50% low income, 2% disabled, 21% Female, 48% African American or Latino/a,

Co-Chair 2014/15 Faculty / Staff Annual Giving Campaign 09/2014 – 07/2015

- Giving rate 33%, \$860,000 (highest at that time)

University of Colorado Denver, Aurora, Colorado **Sept. 2001 - 2014**
Medical School Graduate Faculty Appointment
 Department of Pharmaceutical Sciences 09/2001 – 08/2014
Visiting Professor, Department of Pharmaceutical Sciences 09/2005 – 12/2005

Universidad Politécnica de Aguascalientes, Aguascalientes, México **Jan. 2006 – April 2006**
Visiting Professor, Department of Engineering

University of Colorado at Boulder, Boulder, Colorado **July 1997 –Sept. 2004**
Graduate School Faculty Appointment, Department of Chemical Engineering 09/2000 – 09/2004
Research Associate, Department of Chemical Engineering 07/1997 – 08/1999

National Institute of Standards and Technology, Gaithersburg, Maryland **June 1995 – Oct. 1995**
Visiting Scientist, Process Measurements Division

Southern California Edison San Clemente, California **June 1991- Nov. 1991**
Engineer in Training, San Onofre Nuclear Generating Site

Chevron USA, Inc., Bakersfield, California, USA **June 1989 –Sept. 1989**
Assistant Engineer, Research and Design

ADVISORY BOARDS

Ex Libris 2021 Research Management Council **June 2019 – present**
Board member

Aspen Academy (Independent K-8 school) **July 2020 – present**
Trustee

Higher Education Resource Services Institute **Aug. 2016 – June 2018**
HERS STEM Alumnae Advisory Group
 Claire Booth-Luce scholarship selection committee

Colorado Neurological Institute **July 2016 – June 2018**
Board of Directors
 Executive Finance committee / Treasurer
 Research Committee

FemtoScale Inc., Colorado **Feb. 2015 – June 2016**
Scientific Advisory Board

Mystic Pharmaceuticals, Texas **Jan. 2006 – 2013**
Scientific Advisory Board

EXECUTIVE POSITIONS WITHIN PROFESSIONAL SOCIETIES

Atomization and Sprays (Archival Research Journal) **2006 - Present**
Editor in Chief 2009 – 2015
Editorial Board Member 2006 - Present

Major Accomplishments:

- Took over journal under threat of delisting; successfully moved journal publishing articles six months after the year closed to in-line with year-end requirements
- Moved article processing time from two years to less than six months
- Increased Impact Factor from 0.494 to 1.289

Institute for Liquid Atomization and Spray (ILASS)	2005 - 2018
<i>Conference Organizer/Chair,</i> 2009 International Conference on Liquid Atomization and Spray System Vail, CO (257 papers, \$225,000 revenue)	Summer 2009
<i>At-Large Board Member,</i> ILASS Americas	2005 - 2018
<i>Co-Chair,</i> ILASS Americas Technical Committee on Physics of Atomization	1999 - 2007
<i>Plenary Session Organizer,</i> 22 nd Annual ILASS-Europe, Como, Italy	Summer 2008
Colorado Alliance for Bioengineering	2001-2007
<i>Executive Board Member</i>	
America Society for Mechanical Engineers	1998 - 2006
<i>Chief Judge,</i> ASME Human Powered Vehicle Competition	1998 - 2005
<i>Judge,</i> ASME Human Powered Vehicle Competition	1999 - 2006
<i>Competition Host,</i> ASME Human Powered Vehicle Competition	1998

CONSULTING

City University of New York	01/2019
Growing a thriving research enterprise and redesigning tech transfer at a mid-sized university	
Long Island University	11/2018
Growing a thriving research enterprise at a mid-sized university	
Chapman University	11/2018
Growing a thriving research enterprise at a mid-sized university	
Sealed Air Corp.	06/2018
New packaging exploration to maintain macromolecular therapeutic stability during shipping	
Modality Solutions	02/2017 - 02/2018
Designing industry standard testing to evaluate macromolecular therapeutic stability during shipping	
Corning Inc	06/2015 - 08/2015
Trouble shooting a spray coating process for pharmaceutical vials	
Monsanto	12/2013 - 09/2014
Identified and solved a macromolecular stability issue in a major product line	
Johns Manville	09/2014 - 11/2014
Computational evaluation of a glass product manufacturing process to solve quality problem	
UHL II LLC	09/2013 - 06/2014
Assisted in subcontract oversight of the manufacturing of microneedles for personal fluid draw system	
Patterson & Cooke	07/2014
Computational oversight of new corporate CFD team on their first commercial contract	
University of Bridgeport	04/2013
Growing a thriving research enterprise at a mid-sized university	
NuAngle	11/2012 - 02/2013
New product exploration for an over the counter therapeutic spray	
Neuman Systems Group	11/2010 - 03/2011

New product exploration of singlet delta oxygen in medical applications

Mystic Pharmaceutical 06/2006 - 10/2007
Single use pharmaceutical spray system trouble shooting and expert patent witness

Boston Scientific 09/2005 - 06/2006
Pharmaceutical spray coating process improvement for an implantable medical device

DISCIPLINARY EDUCATION

Post Doc **University of Colorado, Boulder,** 1997 - 1999
Department of Chemical Engineering,
Advisor: Professor Theodore Randolph

Ph.D. **University of California at Irvine** 1997
Department of Mechanical and Aerospace Engineering,
Dissertation: "*Understanding Monodisperse Droplet Stream Behavior: Ambient to Supercritical Conditions*"
Advisor: Professor Derek Dunn-Rankin

MSME **University of California at Irvine**
Department of Mechanical and Aerospace Engineering,
1993
Thesis: "*Instabilities of Monodisperse Droplet Streams Under High Ambient Pressures*"
Advisor: Professor Derek Dunn-Rankin

BSME **University of California at Irvine**
Department of Mechanical and Aerospace Engineering,
1992

LEADERSHIP EDUCATION

Higher Education Resource Services Institute (HERS) July 2013
The HERS Institute is a transformational, leadership development program for women in higher education holding mid-to-senior level positions.

Academic Management Institute for Women in Higher Education (AMI) 2004
A regional off-shoot of the American Council on Education, AMI brings together women professionals in higher education from across Colorado and Wyoming to train future leaders and foster excellence in the region's colleges and universities.

Women in Engineering Leadership Institute (WELI) March 2003
National Science Foundation sponsored retreat and long-term network to prepare women in engineering to be leaders within higher education.

HONORS AND AWARDS

2015 **Robin Morgan Outstanding Woman Award**
Women's Staff Alliance for Networking & Development

2012 **United Methodist Church Scholar/Teacher of the Year Award**
University of Denver in concert with the Division of Higher Education / Board of Higher Education
And Ministry of the United Methodist Church

2012 **Best Citizen Award**
School of Engineering and Computer Science, University of Denver

2007 **US Professor of the Year Nominee**
University of Denver/Chancellor Nominated

- 2007 **Best Scholar Award**
School of Engineering and Computer Science, University of Denver
- 2006 **US Professor of the Year Nominee**
University of Denver/Chancellor Nominated
- 2006 **Extraordinary Women in Engineering**
Changing Our World: True Stories of Women Engineers, by SE Hatch, ASCE Press
- 2005 **Conference Fellowship**
National Academies/Keck Foundation Futures Initiative of the Genomic Revolution: Impact on Infectious Disease
- 2004 **Best Teacher Award**
School of Engineering and Computer Science, University of Denver
- 2003 **New Faces in Engineering Recognition Program**
American Society of Mechanical Engineers
- 2001 **New Faculty Fellowship**
Frontiers in Education
- 1999 **Conference Fellowship for New Professionals**
United Engineering Foundation
Supercritical Fluids in Material Processing and Synthesis Conference, Davos, Switzerland
- 1999 **Award for Outstanding Post-Doctoral Researcher**
American Institute of Chemists Foundation
- 1996/97 **Presidents Dissertation Fellowship**
University of California
- 1995/96 **Government Assistantships in Areas of National Need (GAANN) Fellowship**
- 1995 **NSF/NIST Graduate Student Research Program in Chemical Engineering and Chemistry**
- 1994 - 97 **Graduate Teaching Fellowship**
American Society of Mechanical Engineers
- 1993 **Summer Research Assistant Fellowship**
Graduate & Professional Opportunity Program, University of California
- 1992/93 **Graduate Opportunity Fellowship**
Graduate & Professional Opportunity Program, University of California

RESEARCH INTERESTS

Biopharmaceutical delivery and processing: degradation mechanisms of siRNA, plasmid DNA, and proteins from hydrodynamic phenomena such as shear, surface interaction, cavitation; cost effective mitigation techniques designed to stop or hinder degradation

Inhaled aerosol/spray delivery and deposition: aerosol/spray delivery device design, improving particle deposition behavior

Numerical modeling and characterization of complex fluid systems: Automated computational design optimization and sensitivity analysis

PUBLICATIONS

Archival Journal Publication Summary

Total number of citations: 1253 (Google Scholar)

H-index: 20

*Indicates DU Graduate Student

† Indicates DU Undergraduate Student

Archival Journal Publications

1. **Lengsfeld CS**, Miller K, Lorenzon N, Pacheco L, Barker L, Finigan J, Enos Watamura, Combined use of wastewater viral levels and social profiles to identify and contain SARS-CoV-2 transmission in a university setting. *Journal of the American Medical Association*, submitted Jan 2021
2. Hao Wu, Carly F Chisholm, Meagen Puryear*, Sanli Movafaghi, Samuel D Smith, Yekaterina Pokhilchuk, **Corinne S Lengsfeld**, Theodore W Randolph , Container Surfaces Control Initiation of Cavitation and Resulting Particle Formation in Protein Formulations After Application of Mechanical Shock. *Journal of Pharmaceutical Sciences* 2020, 109 (3), 1270-1280
3. Rodrigues RV*, Puryear M*, Sederstrom D*, and **Lengsfeld CS**. Parameters Influencing Cavitation Within Vials Subjected to Drop Shock. *Scientific Reports (a journal of Nature)* (accepted Nov 28, 2019)
4. Wu H, Chisholm CF, Puryear M*, Movafaghi S, Smith SD, Pokhilchuk Y, **Lengsfeld CS**, Randolph TW. Container surfaces control initiation of cavitation and resulting particle formation in protein formulations following application of mechanical shock. *Journal of Pharmaceutical Sciences* (available online Nov 20, 2019 <https://doi.org/10.1016/j.xphs.2019.11.015>)
5. Harber P, Joneson E, **Lengsfeld CS**, Randolph TW, Seevers R and Shouvik R. The Use of Simulated Transport in the Evaluation of Risks to the Product Quality from the Distribution Process. *USPPF Online Stimuli Article* (submitted August 2019)
6. Rodrigues RV* and **Lengsfeld CS**. Development of a Computational System to Improve Wind Farm Layout, Part II: Wind Turbine Wake Interactions. *Energies*, 12(7) 2019 [Times Cited: 1]
7. Rodrigues RV* and **Lengsfeld CS**. Development of a Computational System to Improve Wind Farm Layout, Part I: Model Validation. *Energies*, 12(5) 2019 [Times Cited: 5]
8. Zeles-Hahn M*, Anchordoquy TJ, and **Lengsfeld CS**. Droplet Surface Energies Can Drive Protein Instability. *Atomization and Sprays*. In press
9. Barakat M, **Lengsfeld CS**, Dvir D, and Azadan A. Investigation of Flow Structures Downstream of SAPIEN3, Core Valve, and PERIMOUNT Magna Using Particle Image Velocimetry. *Bulletin of the American Physical Society* 62 2018
10. Randolph TW, Schiltz E, Sederstrom D*, Steinmann D, Mozziconacci, Schoneich C, Freund E, Ricci MS, Carpenter J, and **Lengsfeld CS**, Do Not Drop: Mechanical Shock in Vials Causes Cavitation, Protein Aggregation and Particle Formation, *Journal of Pharmaceutical Science*, 104:602-611 (Nov 2014) DOI 10.1002/jps.24259 [Times Cited: 34]
11. Higgins P* and **Lengsfeld CS**, Improving mini and micro channel heat transfer by acoustic field, *Journal of Enhanced Heat Transfer*, 20(4) 2014
12. Higgins P* and **Lengsfeld CS**, Air bubble changes from 6-7 kHz ultrasonic exposure in 20C plain water, *Bubble Science, Engineering & Technology*, 4(2)56-62, 2012 [Times Cited: 1]
13. **Lengsfeld CS**, Fulstone R*, and Ogenorth M*, Fabrication of a Fluid Circuit for Equal Filling of a Well Array, *Journal of Engineering*, 2012, Vol. 4 No. 10, 2012, pp. 607-612.
14. Higgins P* and **Lengsfeld CS**, An inexpensive shielded acoustic probe for pressure measurements near a radiating ultrasonic transducer, *Journal of Engineering and Applied Science*, 2012, 7(6):740-749
15. Sponheimer C* and **Lengsfeld CS**, Novel protein-based pressure transducer, *Sensors & Actuators: B. Chemical*, 2012, 168:90-96 [Times Cited: 1]
16. Fulstone R*, Coughlan CM, Wiktorowicz JE, and **Lengsfeld CS**, Micro Liter Incubator Array for Understanding Culture Condition Selectivity, *Advances in Bioscience and Biotechnology*, 2012, 3, 87-91 [Times Cited: 7]
17. Ogenorth M*, Sederstrom D[†], McDermott W, and **Lengsfeld CS**, Maximizing Pressure Recovery using Lobed Nozzles in Supersonic Ejectors, *Applied Thermal Engineering*, 2012, :1-7 (selected as a feature publication of Renewable Energy Global Innovations) [Times Cited: 44]

18. **Lengsfeld CS** and Aguilar G, Targeted medical Sprays Stimulation Therapeutic Effects, *Atomization and Sprays*, (Invited Review) 21 (3): 327-348 (2011) [Times Cited: 2]
19. Opgenorth M*, McDermott W, and **Lengsfeld CS**, Design Process for Coupling Optimization and Probability with Computational Fluid Dynamics, *Atomization and Sprays*, 21 (2): 121-126 (2011) [Times Cited: 2]
20. Opgenorth M*, Laz P, McDermott W, and **Lengsfeld CS**, A Combined Probabilistic and Optimization Approach for Improved Chemical Mixing Systems Design, *Journal of Engineering*, 2011, 3(6): 643-652 [Times Cited: 3]
21. **Lengsfeld CS**, Munson L*, Lentz YK, and Anchordoquy TJ, DNA Hydrodynamic Degradation Controlled by Kolomogorov Length Scales in Pipe Flow, *Journal of Pharmaceutical Sciences*, 2011, 100(8):3088-3095 [Times Cited: 4]
22. Zeles-Hahn M*, Lentz YK, Anchordoquy TJ, and **Lengsfeld CS**, Effect of electrostatic spray on human pulmonary epithelial cells, *Journal of Electrostatics*, 2011, 69(1) 67-77 [Times Cited: 13]
23. Filas B[†] and **Lengsfeld CS**, Mass balance of nebulized drug delivery: Residual Salbutamol Levels Dominate Jet Nebulizer Performance, *Atomization and Spray*, 2008, 18:490-510 [Times Cited: 2]
24. Yi YB and **Lengsfeld CS**, Mechanical modeling of Carbonic Anhydrase motion in simple channels, *Journal of Applied Physics*, 2006, 100 (1), 014701 [Times Cited: 1]
25. Lentz YK, Anchordoquy TJ, and **Lengsfeld CS**, Rationale for the Selection of an Aerosol Delivery System for Gene Delivery, *Journal of Aerosol Medicine* 2006, 19(3): 372-384 [Times Cited: 52]
26. Lentz YK, Anchordoquy TJ, and **Lengsfeld CS**, DNA acts as a nucleation site for transient cavitation in the ultrasonic nebulizer, *Journal of Pharmaceutical Sciences*, 2006, 95 (3): 607-619 [Times Cited: 34]
27. Jarmer DJ, **Lengsfeld CS**, and Randolph TW, Scale-up criteria for an injector with a confined mixing chamber during precipitation with a compressed-fluid antisolvent. *Journal of Supercritical Fluids*, 2006, 37 (2): 242-253 [Times Cited: 17]
28. Jarmer DJ, **Lengsfeld CS**, Anseth KS, and Randolph TW, Supercritical fluid crystallization of griseofulvin: Crystal habit modification with a selective growth inhibitor. *Journal of Pharmaceutical Sciences*, 2005, 94 (12): 2688-2702 [Times Cited:47]
29. Lentz YK, Worden LR*, Anchordoquy TJ, and **Lengsfeld CS**, Effect of jet nebulization on DNA: identifying the dominant degradation mechanism and mitigation methods, *Journal of Aerosol Science*, 2005, 36 (8): 973-990 [Times Cited: 59]
30. Jarmer DJ, **Lengsfeld CS**, and Randolph TW, Nucleation and growth rates of poly(l-lactic acid) microparticles during precipitation with a compressed-fluid antisolvent, *Langmuir*, 2004, 20(17): 7254-7264. [Times Cited: 35]
31. **Lengsfeld CS**, Edelstein G, Black J, Root M, Stevens K, and Whitt M, Engineering Concepts and Communications: A two-quarter course sequence, *Journal of Engineering Education*, 2004, 93(1): 79-85 [Times Cited: 20]
32. Biggs DL, **Lengsfeld CS**, Ng KY, Hybertson BM, Manning MC, and Randolph TW, In vitro and in vivo evaluation of the effects of PLA microparticle crystallinity on cellular response, *Journal of Controlled Release*, 2003, 92:147-161 [Times Cited: 36]
33. DeLyser RR, Edelstein G, **Lengsfeld CS**, Rosa AJ, Rullkoetter P, Whitman R, Summers-Thompson S, and Whitt M. Creating a Student-Centered Learning Environment at the University of Denver, *Journal of Engineering Education*, 2003, 92(3):269-273 [Times Cited: 16]
34. Jarmer DJ, **Lengsfeld CS**, and Randolph TW. Manipulation of particle size distribution of poly(L-lactic acid) nanoparticles with a jet-swirl nozzle during precipitation with a compressed antisolvent, *Journal of Supercritical Fluids*, 2003, 27 (3): 317-336 [Times Cited: 61]

35. **Lengsfeld CS**, Petira, D, Manning MC, and Randolph TW. Dissolution and Partitioning Behavior of Hydrophobic Ion-Paired Compounds, *Pharmaceutical Research*, 2002, 19(10):1572-1576 [Times Cited: 30]
36. **Lengsfeld CS**, Delplanque J-P, and Dunn-Rankin D. Breakup transitions within dense sprays. *Atomization and Sprays*, 2002, 12(4):501-511 [Times Cited: 5]
37. **Lengsfeld CS**, Manning MC, and Randolph TW. Encapsulating DNA within biodegradable polymeric microparticles. *Current Pharmaceutical Biotechnology* (invited review), 2002, 3:227-235 [Times Cited: 20]
38. **Lengsfeld CS** and Anchordoquy T. Shear-induced degradation of plasmid DNA, *Journal of Pharmaceutical Science* (invited review), 2002, 91(7):1581-1589 [Times Cited: 95]
39. Zhou H, **Lengsfeld CS**, Claffey JD, Ruth JA, Hybertson B, Randolph TW, Ng KY, and Manning MC. Hydrophobic ion pairing of isoniazid using a prodrug approach. *Journal of Pharmaceutical Science*, 2002, 91(6):1502-1511 [Times Cited: 38]
40. **Lengsfeld CS**, Delplanque J-P, Barocas VH, and Randolph TW. Mechanism governing microparticle morphology during precipitation by a compressed antisolvent: atomization vs. nucleation and growth. *Journal of Physical Chemistry B*, 2000, 104(12):2725-2735 [Times Cited: 158]
41. **Connon¹ CS**, Falk RF, and Randolph TW. Role of crystallinity in retention of polymer particle morphology in the presence of compressed carbon dioxide. *Macromolecules*, 1999, 32(6), 1890-1896 [Times Cited: 10]
42. **Connon¹ CS**, Dimalanta R, Choi C, and Dunn-Rankin D. LIF measurements of fuel vapor in an acetone droplet stream. *Combustion Science and Technology*, 1997, 129(1-6), 197-216 [Times Cited: 20]
43. **Connon¹ CS** and Dunn-Rankin D. Droplet stream dynamics at high ambient pressure. *Atomization and Sprays*, 1996, 6, 485-497 [Times Cited: 19]
44. **Connon¹ CS** and Dunn-Rankin D. Flow behavior near an infinite droplet stream. *Experiments in Fluids*, 1996, 21, 80-86 [Times Cited: 17]

Archival Peer Reviewed Conference Proceedings

1. Rodrigues R*, and **Lengsfeld CS**, “Automated Gradient-Based Optimization to Maximize Wind Farms Land-Use,” 36th AIAA Applied Aerodynamics Conference, 2018 [Times Cited; 1]
2. Rodrigues R*, and **Lengsfeld CS**, “Development of a Computational System to Optimize Wind Farm Layout,” 35th AIAA Applied Aerodynamics Conference, 2017 [Times Cited: 1]
3. Sederstrom D*, Rodrigues R*, Puryear M[†] and **Lengsfeld CS** (2015), “Parameters Influencing cavitation within therapeutic vials subjected to drop,” American Chemical Society 249th Annual Conference, Denver, CO
4. Gordon M, Davidson B, Chao. B and **Lengsfeld CS**, “Providing ME students opportunities to enroll in law school courses,” ASEE Annual Conference, 2015
5. Gordon M, Davidson B, and **Lengsfeld CS**, “Adding Flexibility and Hands-On Experiences while Minimizing Sequential Gaps in the ME Curriculum,” ASEE Annual Conference, 2014
6. Jacobs J*, Tripp J[†], Underwood D, and **Lengsfeld CS** (2013) “Optimization of micro-textured surfaces for turbine vane impingement cooling,” Proceeding of ASME Turbo Expo 2013, San Antonio Texas -GT2013-94727 [Times cited:2]
7. Scott, N*, Talukder R*, Clinkenbeard A*, **Lengsfeld CS**, and Azadani A, Fully-Coupled Fluid Structure Interaction Simulation of Transcatheter Aortic Valve: Implication for Long-Term Valve Durability. *Journal of the American College of Cardiology* 62 (18 Supplements1) B36 2013 [Times cited: 2]
8. Worden R* and **Lengsfeld CS** (2012) “Optimization of Spray Droplet Distribution for reliable operation,” International Conference on Liquid Atomization and Spray Systems, Heidelberg, Germany
9. Giarratano J* and **Lengsfeld CS** (2012) “Cavitation induced protein aggregation by ultrasonic nebulization,” International Conference on Liquid Atomization and Spray Systems, Heidelberg, Germany

10. Opgenorth M* and Lengsfeld CS (2009) “Automated design of a spray separator,” 11th International Conference on Liquid Atomization and Spray, Vail, Colorado
11. Opgenorth M* and **Lengsfeld CS** (2009) “VOF simulation of a liquid sheet in a high speed counterflow,” 11th International Conference on Liquid Atomization and Spray, Vail, Colorado
12. Zeles-Hahn M.*, Anchordoquy TJ, and **Lengsfeld CS** (2009) “Thermodynamic explanation for protein stability during aerosolization,” 11th International Conference on Liquid Atomization and Spray, Vail, Colorado
13. Zeles-Hahn M.*, Anchordoquy TJ, and **Lengsfeld CS** (2009) “Novel technique for the fabrication of nano-liposomes,” 11th International Conference on Liquid Atomization and Spray, Vail, Colorado
14. Zeles-Hahn M.*, Anchordoquy TJ, and **Lengsfeld CS** (2008) “Observations on the impact of Aerosolization on Therapeutic Macromolecules,” 22nd Annual ILASS-Europe, Como, Italy [Times Cited: 3]
15. Filas BA[†] and **Lengsfeld CS** (2005), “Evaluating the use of electrostatic forces to increase Salbutamol deposition in the deep lung,” ASME Summer Bioengineering Conference, Vail, Colorado
16. Lentz YK, **Lengsfeld CS.** and Anchordoquy TJ (2005), “Cellular & Cytokine Response to Pulmonary Gene Delivery by Electrohydrodynamic Sprays.” AAAR, Austin, Texas
17. Lentz Y, Worden L*, Anchordoquy T, and **Lengsfeld CS.** Pulmonary Gene Delivery: Impact of Aerosolization Method on Bioactivity, *Journal of Aerosol Medicine*, 2003, 16(2):196 [Times Cited: 2]
18. Jarmer DJ, **Lengsfeld CS,** and Randolph TW (2003) “An experimental study of the precipitation kinetics of poly(l-lactic acid) during precipitation with a compressed-fluid antisolvent,” AIChE Annual Meeting,
19. Delplanque J-P, Labs J, **Lengsfeld CS,** and Parker TE (2003) “Evaluation of the relative time scales of mechanisms controlling fuel droplet behavior in diesel engines,” paper HT2003-40559, ASME Heat Transfer Conference, 2003.
20. Delplanque J-P, Labs J, **Lengsfeld CS,** and Parker TE. IMECE2002-39057 Effect of Thermodynamic Conditions on Droplet Size in Diesel Engines: Importance of an Advanced Surface Tension Model, ASME-PUBLICATIONS-HTD 372 (2002): 31-34. [Times Cited: 1]
21. **Lengsfeld CS,** Black J, and Root M. Engineering Concepts and Communications, *Proceeding of the Frontiers in Education Conference*, 2001, F4D:17-21 [Times Cited: 5]
22. DeLyser RR, Edelstein G, **Lengsfeld CS,** Rosa AJ, Rullkoetter P, Whitman R, Whitt M, and Summers Thompson S. Enabling effective learning - curriculum delivery reform at the University of Denver, *Proceeding of the Frontiers in Education Conference*, 2001, S1B:1 [Times Cited: 5]
23. **Lengsfeld CS** and Delplanque J-P. Prediction of gas- or liquid- like jet injection behavior in practical combustion systems based on initial surface tension values. *Proceedings of 8th International Conference on Liquid Atomization and Spray Systems*, Pasadena, 2000:516-521 [Times Cited: 1]
24. Lee A, Saulters OS, **Connon¹ CS,** and Castillo HG. Destruction of ammonia and acetic acid by hydrothermal oxidation, *Proceedings of the 1996 ASME International Mechanical Engineering Congress and Exposition*. 1996, Part I:189-202. [Times Cited: 3]
25. Lauder GV; **Connon¹ CS,** and Dunn-Rankin D. Visualization of flow behind the tail of swimming fish: New data using DPIV techniques. *American Zoologist*, 1996, 36(5):7A [Times Cited: 5]

Books or Chapters

1. **Lengsfeld CS** and Anchordoquy TJ, “Chapter 4: Basic Issues in the Manufacture of Macromolecules,” *Handbook on Pharmaceutical Biotechnology*, Ed. SC Gad, John Wiley and Sons, Hoboken New Jersey, 2007 pg. 297-318 [Times Cited: 73]

Patents

1. **Lengsfeld CS**, Falk RF, and Randolph TW, “Microparticles of lactide-co-glycolide copolymers and methods of making and using the same.” US Patent # 6,319,521 (issued 11/20/01) [Times Cited:11]
2. Manning M, Randolph T, Biggs D, Dernel W., Feng L, Katayama D, **Lengsfeld C**, Meyer J, Pitera D, “Compositions and methods for controlled-release delivery and increased potency of pharmaceuticals via hydrophobic ion-pairing.” WO # 2001032218 EP #1,225,916 (issued 11/5/2001) [Times Cited: 2]
3. Randolph TW, Anseth K, Owens J, and **Lengsfeld CS**, “Preparation and use of photopolymerized microparticles.” US Patent # 6,403,672 (issued 6/11/02) [Times Cited: 8]
4. Randolph TW, Anseth, K, Owens J, and **Lengsfeld CS**, “Preparation and use of photopolymerized microparticles.” US Patent # 6,864,301 (issued 3/8/05) [Times Cited: 22]
5. Grothe W, Jarmer D, **Lengsfeld CS**, and Randolph TW, “Devices and methods for the production of particles” US Patent # 7,332,111 (issued 2/19/08) [Times Cited: 20]
6. Anchordoquy TJ, Jones R[†], Brinkley K[†], and **Lengsfeld CS**, “Methods and apparatus using electrostatic atomization to form liquid vesicles” US Patent # 7,914,714 (issued 3/11/11) [Times Cited: 12]
7. **Lengsfeld CS** and Shoureshi RA, “Smart Apparatus for Gait Monitoring and Fall Prevention,” US Patent Application 11/556,858 (2009) [Times Cited: 27]
8. Sederstrom D[†], Grubb T[†], Jansey A[†], Brune C[†] and **Lengsfeld CS**, “Shaped evacuation port for a multi-lumen tracheal tube”, US Patent #9,352,112 (issued 5/31/2016) [Times Cited: 6]
9. Sederstrom D[†], Grubb T[†], Jansey A[†], Brune C[†] and **Lengsfeld CS**, “Multi-lumen tracheal tube with pressure distribution”, US Patent application #13/274,996 [Times Cited: 4]
10. Higgins P* and **Lengsfeld CS**, “Micro channel cooler performance enhancement by insonation,” US Patent Disclosure submitted August 15, 2012

Conference Papers

1. **Lengsfeld CS**, “Protein Aggregation and Particle Formulation as a Function of Shock Events”, 2018 PDA Container Closure Performance and Integrity Conference, June 2018, Bethesda Maryland (Invited speaker)
2. Rodrigues R*, and **Lengsfeld CS**, “Automated Gradient-Based Optimization to Maximize Wind Farms Land-Use,” 14th Annual Small Wind Conference April 2018, Bloomington Minnesota
3. Rodrigues R*, and **Lengsfeld CS**, “Development of a System to Optimize Wind Farm Layout,” 13th Annual Small Wind Conference April 2017, Bloomington Minnesota
4. Rodrigues R*, and **Lengsfeld CS**, “Development of a Computational System to Optimize Wind Farm Layout,” 35th WINDPOWER 2017 Conference
5. Stewart B*, Shahnaz J, Wilcox D, **Lengsfeld CS**, and Azadani A (2016), “3D Bioprinting of Tissue Engineered Aortic Root Scaffolds with Hydrogels,” BMES Annual Meeting, Minneapolis, Minnesota
6. Puryear M*, Sederstrom* D, Rodrigues R*, and **Lengsfeld CS** (2016), “Surface Geometry May Matter in Cavitation Induced by Drop Shock in Vials,” Workshop on Protein Aggregation and Immunogenicity, Breckenridge, CO
7. Sederstrom D*, and **Lengsfeld CS** (2016), “Lifetime design improvement of a peristaltic pump using fluid-interaction modeling,” Workshop on Protein Aggregation and Immunogenicity, Breckenridge, CO
8. Wu H, Puryear M*, **Lengsfeld CS**, Randolph TW (2016), “Mechanisms of protein aggregation and particle formation during cavitation events,” Workshop on Protein Aggregation and Immunogenicity, Breckenridge, CO
9. Sederstrom D*, Rodrigues R*, Puryear M[†] and **Lengsfeld CS** (2015), “Parameters Influencing cavitation within therapeutic vials subjected to drop,” Colorado Protein Stability Conference, Breckenridge, CO

10. Sederstrom D*, Laz P and **Lengsfeld CS** (2014), "Computational modeling of particles shedding in peristaltic pumps," Workshop on Protein Aggregation and Immunogenicity, Breckenridge, CO
11. Babazadehrokni, H*, Randolph T and **Lengsfeld CS** (2014), "High speed imaging of cavitation in dropped vials," Workshop on Protein Aggregation and Immunogenicity, Breckenridge, CO
12. Bissell D, Lai W, Stegmeir M, Pothos S., and **Lengsfeld CS** (2014), "An Approach to Spray Characterization by Combination of Measurement Techniques," ILASS Americas Conference, Portland Oregon [Times Cited: 2]
13. Sederstrom D*, Wilson I†. and **Lengsfeld CS** (2013), "Risk and mitigation of cavitation in a pipe contraction," Colorado Protein Stability Conference, Breckenridge, CO
14. Sederstrom D*, Tripp J†. and **Lengsfeld CS** (2013), "Occurrence of cavitation in a pharmaceutical vial when dropped," Colorado Protein Stability Conference, Breckenridge, CO
15. **Lengsfeld CS** (2013) "Cavitation and potential protein damage happen more often than you want" Colorado Protein Stability Conference, CO (Invited Talk)
16. **Lengsfeld CS** (2012) "Bad, Bad Bubbles" (2012) Colorado Protein Aggregation Mini Symposium, Boulder, CO (Keynote)
17. Giarratano J*, Carpenter J. and **Lengsfeld CS** (2012) "Protein particle formation through acoustic cavitation in ultrasonic nebulizers," Workshop on Protein Aggregation and Immunogenicity, Breckenridge, CO
18. Sederstrom D*, Carpenter C, Carpenter J. and **Lengsfeld CS** (2012), "Probability of Cavitation in a Pipe Contraction as a Function of Solution Concentration," Workshop on Protein Aggregation and Immunogenicity, Breckenridge, CO
19. Worden R* and **Lengsfeld CS** (2012) "Optimization of Spray Droplet Distribution for reliable operation," 24th Annual Conference on Liquid Atomization and Spray Systems, San Antonio, TX [Times Cited: 1]
20. Giarratano J* and **Lengsfeld CS** (2012) "Cavitation induced protein aggregation by ultrasonic nebulization," 24th Annual Conference on Liquid Atomization and Spray Systems, San Antonio, TX [Times Cited: 2]
21. Higgins P* and **Lengsfeld CS** (2011) "A shielded acoustic probe for accurate dynamic pressure measurements in the near field of radiating ultrasonic transducer", ASME National Congress, Denver, Colorado
22. Higgins P* and **Lengsfeld CS** (2011) "A New Model for Rectified Heat Transfer in Bubbles Exposed to an Ultrasonic Field", ASME National Congress, Denver, Colorado
23. Weber L* and **Lengsfeld CS** (2011) "Spray Nebulizer Deposition Efficiency as a Function of Age," 23rd Annual Conference on Liquid Atomization and Spray Systems, Ventura, CA (Best Conference Paper Finalist)
24. Weber L* and **Lengsfeld CS** (2011) "Spray Nebulizer Deposition Efficiency Impact of Species," 23rd Annual Conference on Liquid Atomization and Spray Systems, Ventura, CA
25. Zeles-Hahn M* and **Lengsfeld CS** (2011) "Novel Liposome Manufacturing Method Using EHDA," 23rd Annual Conference on Liquid Atomization and Spray Systems, Ventura, CA (Best Conference Paper Finalist)
26. Tousifari B*, Teska B, Carpenter, and **Lengsfeld CS** (2011) "Protein nucleated cavitation during nebulization leading to small particle aggregation," Protein Stability Conference, Beaver Run, Colorado (invited contribution)
27. DeWeese H†, Giarratano J*, and **Lengsfeld CS** (2011) "Computational Investigation of cavitation common vial filling operations." Protein Stability Conference, Beaver Run, Colorado (invited contribution)
28. Welch I*, Shoureshi RA, and **Lengsfeld CS** (2008) "Wearable Gait Sensor System," BioWest, Denver, Colorado
29. Fulstone R* and **Lengsfeld CS** (2008) "Microliter Incubator Array for Infectious Disease," BioWest, Denver, Colorado

30. Zeles-Hahn M*, Lentz Y, Anchordoquy TJ and **Lengsfeld CS** (2007), "Cellular Response of Human Lung Cells to EHDA," 20th Annual Conference on Liquid Atomization and Spray Systems, Chicago, IL
31. Zeles-Hahn M*, Nottingham E[†] and **Lengsfeld CS** (2007), "Understanding EHDA and Protein Stability," 20th Annual Conference on Liquid Atomization and Spray Systems, Chicago, IL
32. Zeles-Hahn M* and **Lengsfeld CS** (2006), "What Happen to siRNA During Jet Nebulization?," 19th Annual Conference on Liquid Atomization and Spray Systems, Toronto, Canada
33. **Lengsfeld CS** (2005), "Hydrodynamic Degradation of Plasmid DNA". National Academies/Keck Foundation Futures Initiative of the Genomic Revolution: Impact on Infectious Disease, Irvine, CA
34. Filas BA[†] and **Lengsfeld CS** (2005), "Albuterol Deposition Performance Study," Colorado Alliance for Bioengineering Student Research Forum, Fort Collins, Colorado
35. Oliver AB[†], Delplanque J-P, and **Lengsfeld CS** (2005) "Two fluid VOF simulation of a droplet impacting a liquid pool," 18th Annual Conference on Liquid Atomization and Spray Systems, Irvine, CA
36. Lentz YK, Anchordoquy TJ, and **Lengsfeld CS** (2005) "DNA acts as a nucleation site for transient cavitation in the ultrasonic nebulizer," 18th Annual Conference on Liquid Atomization and Spray Systems, Irvine, CA
37. Filas BA[†] and **Lengsfeld CS** (2005), "Residual Salbutamol levels dominate jet nebulizer performance," ASME Summer Bioengineering Conference, Vail, Colorado
38. Pham T[†] and **Lengsfeld CS** (2005), "Development of a low cost Gait Sensor System," Colorado Alliance for Bioengineering Student Research Forum, Fort Collins, Colorado
39. Jones R[†] and **Lengsfeld CS** (2005), "Fabrication of synthetic vectors for gene delivery," Colorado Alliance for Bioengineering Student Research Forum, Fort Collins, Colorado
40. **Lengsfeld CS**, Jones R[†], Brinkley K[†], Lentz Y, Oliver B[†], and Worden L[†] (2004), "Manufacturing Synthetic Vectors using Electrostatic Co-extrusion." IEEE, Denver, Colorado
41. Worden L[†], Lentz Y, Anchordoquy TJ, and **Lengsfeld CS** (2004), "Effect of electrostatics on macromolecular therapeutics," 17th Annual Conference on Liquid Atomization and Spray Systems, Washington, D.C.
42. Lentz Y, Worden L[†], Anchordoquy TJ, and **Lengsfeld CS** (2004), "Effect of jet nebulization on DNA: Identifying dominant degradation mechanism and mitigation methods," 17th Annual Conference on Liquid Atomization and Spray Systems, Washington, D.C.
43. Lentz Y, Worden L[†], Anchordoquy TJ, and **Lengsfeld CS** (2004), "Effect of jet nebulization on DNA: Identifying dominant degradation mechanism and mitigation methods," Respiratory Drug Delivery, Palm Desert, California
44. Lentz Y, Worden L[†], Anchordoquy TJ, and **Lengsfeld CS** (2004), "Effect of aerosolization method on DNA," Respiratory Drug Delivery, Palm Desert, California
45. Lentz Y, Worden L[†], Anchordoquy TJ, and **Lengsfeld CS** (2003), "Pulmonary Gene Delivery: Impact of Nebulization on Bioactivity," BioWest, Denver, Colorado
46. Worden L[†], Oliver AB[†], Lentz Y, Anchordoquy TJ, and **Lengsfeld CS** (2003), "Effect of Electrostatic Sprays on Macromolecules," BioWest, Denver, Colorado
47. Snook T*, Krier T*, and **Lengsfeld CS** (2003), "Improving drug delivery to patients on mechanical ventilators," BioWest, Denver, Colorado
48. Lentz Y, Worden L[†], Anchordoquy TJ, and **Lengsfeld CS** (2003), "Pulmonary Gene Delivery: Impact of Aerosolization Method on Bioactivity," UCHSC, Department of Pharmaceutical Sciences Annual Meeting (Best student paper award)
49. Jarmer DJ, **Lengsfeld CS**, and Randolph TW (2003) "Nucleation and growth kinetics of poly(l-lactic acid) microparticles during precipitation with a compressed-fluid antisolvent," Control Release Society

50. Anchordoquy T, Jones R[†], Brinkley K[†], and **Lengsfeld CS** (2003), "A novel method for efficiently encapsulating therapeutics within self-assembling vesicles," AAPS Annual Meeting & Exposition, Salt Lake City, Utah
51. Jarmer DJ, **Lengsfeld CS**, and Randolph TW (2003) "Nucleation and growth kinetics of poly (*l*-lactic acid) microparticles during precipitation with a compressed-fluid antisolvent," 226th ACS National Meeting, New York, NY.
52. Worden L[†], Lentz Y, Anchordoquy TJ, and **Lengsfeld CS** (2003), "Impact of, pressure-swirl, nebulization and electrostatic atomizers on macromolecules," 16th Annual Conference on Liquid Atomization and Spray Systems, Monterey, CA
53. Jones R[†], Brinkley K[†], Anchordoquy TJ, and **Lengsfeld CS** (2003), "Improving Gene Delivery Using Electrostatic Co-Extrusion Techniques," 16th Annual Conference on Liquid Atomization and Spray Systems, Monterey, CA
54. **Lengsfeld CS** and Delplanque J-P (2003), "Impact of Higher Accuracy Surface Tension Models on Primary and Secondary Atomization in High-Pressure Combustion Devices," 16th Annual Conference on Liquid Atomization and Spray Systems, Monterey, CA
55. Lentz L, Worden L[†], Anchordoquy T, and **Lengsfeld CS** (2002) "Shear-Induced degradation of plasmid DNA," BioExpo, Denver, Colorado
56. **Lengsfeld CS**, Lentz Y, Anchordoquy T, Dunn-Rankin D, and Manning M (2002) "Suitability of electrostatic spraying of macromolecular therapeutics," 15th Annual Conference on Liquid Atomization and Spray Systems, Madison, WI
57. Jarmer DJ, **Lengsfeld CS**, and Randolph TW (2002) "A jet-swirl nozzle design for manipulating particle size and size distribution of poly(L-lactic acid) at the nano and micro scale in the precipitation with a compressed-fluid antisolvent (PCA) process," AAPS Annual Meeting & Exposition, Virginia
58. Jarmer DJ, **Lengsfeld CS**, and Randolph TW (2002) "A jet-swirl nozzle design for producing nanoscale polymer particles in the supercritical fluid antisolvent process," 15th Annual Conference on Liquid Atomization and Spray Systems, Madison, WI
59. Delplanque J-P, Labs J, **Lengsfeld CS**, and Parker TE (2002) "Effect of thermodynamic conditions on droplet size in diesel engines: importance of an advanced surface tension model," International Mechanical Engineering Congress and Exposition, New Orleans, Louisiana
60. Jarmer DJ, **Lengsfeld CS**, and Randolph TW (2002) "A jet-swirl nozzle design for producing nanoscale polymer particles in the supercritical fluid antisolvent process," Particles 2002 Conference, Orlando, Florida
61. **Lengsfeld CS** and Dunn-Rankin D (2001) "Electrosprays for effective pulmonary drug delivery to patients on mechanical ventilators," Colorado BioExpo, Denver, Colorado
62. Rhoads J[†], Lentz L, Carson T, Anchordoquy T, and **Lengsfeld CS** (2001) "Hydrodynamic degradation of plasmid DNA," Colorado BioExpo, Denver, Colorado
63. Jarmer DJ, **Lengsfeld CS**, and Randolph TW (2001) "Precipitation with a Compressed Antisolvent (PCA) Production of Biodegradable Nanoparticles," 43rd Rocky Mountain Conference on Analytical Chemistry, Denver, Colorado
64. Biggs D, Hybertson BM, **Lengsfeld CS**, Ng KL, Manning M, and Randolph TW (2001) "Cellular response to poly(l-lactide) microparticles for pulmonary delivery," AAPS Annual Meeting & Exposition, Denver, Colorado
65. Biggs D, **Lengsfeld CS**, Manning, MC, and Randolph TW (2001) "Enhanced efficacy of ion-paired tetracycline," AAPS Annual Meeting & Exposition, Denver, Colorado
66. Jarmer, DJ, **Lengsfeld CS**, and Randolph TW (2001) "Precipitation with a Compressed Antisolvent (PCA) Production of Biodegradable Nanoparticles," Macromolecular Drug Delivery Conference, Breckenridge, Colorado

67. Biggs DL, **Lengsfeld CS**, Hyubertson BM, Ng LK, Manning MC, and Randolph TW (2001) "Cellular response to poly(l-lactide) microparticles for pulmonary delivery," Macromolecular Drug Delivery Conference, Breckenridge, Colorado (Best student paper award)
68. Rhoads J[†], Carson T, Lengsfeld CS, Anchordoquy TJ (2001) "Hydrodynamic degradation of plasmid DNA," AAPS Annual Meeting & Exposition, Denver, Colorado
69. **Lengsfeld CS**, Rhoads J[†], Carson T, and Anchordoquy TJ (2001) "Preliminary observations of the hydrodynamic degradation of plasmid DNA," 14th Conference on Liquid Atomization and Spray Systems, Dearborn, Michigan
70. **Lengsfeld CS**, Delplanque, J-P, and Dunn-Rankin D (2001) "Breakup transitions within dense sprays," 14th Conference on Liquid Atomization and Spray Systems, Dearborn, Michigan
71. Biggs DL, **Lengsfeld CS**, Manning MC, and Randolph TW (2001) "Enhanced efficacy of ion-paired tetracycline," Control Release Society, San Diego, California
72. Biggs DL, **Lengsfeld CS**, Manning MC, and Randolph TW (2001) "Cellular response to poly(l-lactide) microparticles for pulmonary delivery," Control Release Society, San Diego, California
73. Delplanque J-P and Lengsfeld CS (2001) "Multiple-Scale Aspects of Spray Combustion Modeling in Diesel Engines," 2nd Joint Meeting of the US Section of the Combustion Institute, Oakland, California
74. Biggs DL, **Lengsfeld CS**, Hybertson HM, Ng LK, Manning MC, and Randolph TW (2000) "Effect of poly(l-lactide) microparticle crystallinity on alveolar macrophage inflammatory response," AAPS Annual Meeting & Exposition, Indianapolis, Indiana
75. Pitera D, **Lengsfeld CS**, Manning, MC, and Randolph TW (1999) "Fundamental study of hydrophobic ion-pairing: pharmaceutical preparation and controlled dissolution," AIChE Annual Meeting, Dallas, Texas.
76. Owens JL, Gonzales K, **Lengsfeld CS**, Randolph TW, and Anseth KS (1999) "Antisolvent processing of photopolymerized crosslinked microparticles," Supercritical Fluids in Material Processing and Synthesis Conference, Davos, Switzerland
77. **Lengsfeld CS**, Falk RF, Manning, MC, and Randolph TW (1999) "Influences of microparticle crystallinity on PCA processing and cell behavior," Supercritical Fluids in Material Processing and Synthesis Conference, Davos, Switzerland
78. **Lengsfeld CS**, Barocas, VH, Delplanque, J-P, and Randolph TW (1999) "Investigation of the mechanisms governing microparticle formation," Supercritical Fluids in Material Processing and Synthesis Conference, Davos, Switzerland
79. Biggs DL, **Lengsfeld CS**, Ng LK, Manning MC, and Randolph TW (1999) "Effect of poly(l-lactide) microparticle crystallinity on alveolar macrophage inflammatory response," Colorado Biotechnology Symposium, Boulder, Colorado
80. **Lengsfeld CS**, Delplanque, J-P, Barocas VH, and Randolph TW (1999) "The evolution of interfacial tension in miscible jets injected into near- and super-critical fluids," Dense Gas Dynamics Workshop, Boulder, Colorado
81. Biggs DL, **Lengsfeld CS**, Ng LK, Manning MC, and Randolph TW (1999) "Effect of crystallinity on activation of alveolar macrophage cells by poly(l-lactide) and poly(lactide-co-glycolide) microparticles," Macromolecular Drug Delivery Conference, Breckenridge, Colorado
82. Owens JL, Anseth KS, **Lengsfeld CS**, and Randolph TW (1999) "Controlled release applications of photopolymerized microparticles using compressed antisolvents," Macromoleculu Drug Delivery Conference, Breckenridge, Colorado
83. Owens JL, Anseth KS, **Lengsfeld CS**, and Randolph TW (1999) "Photopolymerization of polymer microparticles using compressed antisolvents for use in controlled release applications," Controlled Release Society's annual conference, Boston

84. **Lengsfeld CS**, Delplanque J-P, Barocas VH, and Randolph TW (1999) "Jet breakup length prediction for miscible fluid systems," 12th Annual Conference on Liquid Atomization and Spray Systems, Indianapolis, Indiana.
85. **Lengsfeld CS**, Falk RF, and Randolph TW (1998) "Polymer microsphere recrystallization effects," AIChE Annual Meeting, Miami, Florida.
86. Barocas VH, **Lengsfeld CS**, Manning MC, Randolph TW, and Xu J (1998) "Ocular delivery of hydrophobic ion-paired drugs using biodegradable microspheres produced by gas antisolvent precipitation," AIChE Annual Meeting, Miami
87. **Lengsfeld CS**, Barocas VH, and Randolph TW (1998) "Liquid jet breakup in systems with low liquid-gas density ratios and high miscibilities," AIChE Annual Meeting, Miami, Florida.
88. **Lengsfeld CS** and Randolph TW (1998) "The role of atomization in polymer microfiber formation in precipitation with a compressed antisolvent," AIChE Annual Meeting, Miami, Florida.
89. **Connon CS¹**, Barocas VH, and Randolph TW (1998) "Application of jet breakup to systems with low liquid-gas density ratios and high miscibilities," 11th Annual Conference on Liquid Atomization and Spray Systems, Sacramento, California
90. **Connon CS¹** and Dunn-Rankin D (1997) "Observations of droplet streams at high temperature and pressure," 10th Annual Conference on Liquid Atomization and Spray Systems, Ottawa, Canada
91. Choi C, **Connon CS¹**, and Dunn-Rankin D (1996) "LIF measurements of fuel vapor in an acetone droplet stream," Western States Section/The Combustion Institute Fall Meeting, USC
92. **Connon CS¹** and Lee A (1996) "Oxidant effects on supercritical water oxidation," AIChE Annual Meeting, Chicago
93. Dimalanta R, **Connon CS¹**, and Dunn-Rankin D (1996) "Characterization of a rectilinear droplet stream flame," work-in-progress poster at the 26th International Symposium on Combustion, Naples, Italy
94. **Connon CS¹** and Dunn-Rankin D (1993) "Instabilities of droplet streams under high ambient pressure," Western States Section/The Combustion Institute Fall Meeting, SRI International.

Invited Seminars

1. **Lengsfeld CS**, "Backward Contact Tracing," STAT Conference: Higher Education COVID Response, January 2021
2. **Lengsfeld CS**, "How to Lead During a Time of Incredible Change," (Chevron Lecture Series) Colorado School of Mines, October 2020
3. **Lengsfeld CS**, "Effect of Cavitation in Macromolecular Therapeutics: processing to delivery," ILASS- Europe Annual Conference (Keynote), Israel, (virtual) September 2020
4. **Lengsfeld CS**, "How to Lead During a Time of Incredible Change," (Keynote) AMI, January 2020
5. **Lengsfeld CS**, "Future of Research in Higher Education," HERS Institute at Denver, June 2017
6. **Lengsfeld CS**, "Future of Research in Higher Education," HERS Institute at Denver, July 2016
7. **Lengsfeld CS**, "Do not drop: Why biologics advertised on TV has such scary potential side effects," University of Denver, 50th Class Reunion Dinner, Denver, Colorado, June 2016
8. **Lengsfeld CS**, "Growing a Research and Scholarship Enterprise in the Modern Landscape," University of Bridgeport, Faculty Research Day Keynote, Bridgeport, CT, April 2016
9. **Lengsfeld CS**, "Do not drop: Why biologics advertised on TV has such scary potential side effects," University of Denver, Pioneer Symposium, Denver, Colorado, September 2015

¹ CS Lengsfeld previously published under the name CS Connon

10. **Lengsfeld CS**, "Improving Reliability of Pulmonary Drug Delivery," University of Denver, Pioneer Symposium, Denver, Colorado, September 2013
11. **Lengsfeld CS**, "Improving Reliability of Pulmonary Drug Delivery," Colorado School of Mines, Golden, CO, December 2011
12. **Lengsfeld CS**, "Improving Reliability of Pulmonary Drug Delivery," University of Denver (All campus lecture), Denver, Colorado, September 2011
13. **Lengsfeld CS**, "The medical revolution: Impact on disease," Colorado State University, Fort Collins, CO, May 2006
14. **Lengsfeld CS**, "The medical revolution: Impact on disease," Universidad Politecnica de Aguascalientes, March 2006
15. **Lengsfeld CS**, "The medical revolution: Impact on disease," Colorado School of Mines, Golden, CO, November 2005
16. **Lengsfeld CS**, "The medical revolution: Impact on disease," University of Denver (Fall Provost Lunch), Sept. 2005
17. **Lengsfeld CS**, "Lowering the cost of therapeutics using fluid dynamics," National Institute of Standards and Technology, Boulder, Colorado, July 2004
18. **Lengsfeld CS**, "Manipulating poly (l-lactic acid) particle size using gas-like mixing in the precipitation with a compressed antisolvent process," University of Denver (Sigma Xi Lecture), Denver, Colorado, March 2004
19. **Lengsfeld CS**, "Making gene therapy a reality: scientific issues," Colorado State University, Fort Collins, Colorado, January 2004
20. **Lengsfeld CS**, "Improving pulmonary drug delivery to patients on mechanical ventilators," Pulmonetic Systems Inc, Minneapolis, Minnesota, December 2003
21. **Lengsfeld CS**, "Making gene therapy a reality: scientific issues," University of Denver (All campus lecture), Denver, Colorado, September 2003
22. **Lengsfeld CS**, "Manipulating poly (l-lactic acid) particle size using gas-like mixing in the precipitation with a compressed antisolvent process," National Institute of Standards and Technology, Gaithersburg, Maryland, July 2002
23. **Lengsfeld CS**, "Biotechnology problem solving using fluid mechanic and thermodynamic engineering: current and future studies," University of Denver, Colorado, October 1999
24. **Lengsfeld CS**, "Fundamental investigations which have expanded and improved the PCA technology," University of Denver, Colorado, January 1999
25. **Lengsfeld CS**, "Fundamental investigations expanded and improved PCA technology," RxKinetix, Louisville, Colorado, November 1998
26. **Connon¹ CS**, "Significance of droplet-droplet interactions in droplet streams," Department of Chemical Engineering, University of Colorado at Boulder, January 1998
27. **Connon¹ CS**, "Significance of droplet-droplet interactions in droplet streams," Department of Mechanical Engineering, University of Colorado at Boulder, November 1997
28. **Connon¹ CS**, "Significance of droplet-droplet interactions in droplet streams," Carnegie Mellon University, Pittsburg, Pennsylvania, March 1997
29. **Connon¹ CS**, "Significance of droplet-droplet interactions in droplet streams," Colorado School of Mines, February 1997
30. **Connon¹ CS**, "The ambient environment established by a lead droplet: LIF measurements," MetroLaser, Irvine, California, February 1997

31. **Connon¹ CS**, “Understanding droplet stream behavior under various conditions,” University of California at Davis, January 1997
32. **Connon¹ CS**, “Understanding droplet stream behavior under various conditions,” University of California at San Diego, November 1996
33. **Connon¹ CS**, “Understanding droplet stream behavior subjected to extreme conditions,” Phillips Laboratory, Edwards Air Force Base, California, October 1996

CONTRACTS AND GRANTS

Summary of Sponsored Programs Activities

Total value of externally funding:	>\$5.0 Million (not including \$4.6 M in Cares funding)
Total value of institutional funding:	>\$278K

Externally Funded

1. Carpenter JF, Randolph TW and **Lengsfeld CS** *Handling and distribution causes and consequences for aggregation of biologics*, Funded by Sealed Air at **\$170,000** from October 2018 to September 2019 (CSL was PI – transferred grant to TW Randolph when became interim provost became co-PI)
2. Carpenter JF, Randolph TW and **Lengsfeld CS** *Interplay between product pumping factors on peristaltic pump-induced particle formation: protein characteristics, formulation, tubing, fluid dynamics and post-pumping stresses*, Funded by Johnson and Johnson at **\$212,000** from January 2017 to December 2017 (CSL was coPI)
3. **Lengsfeld CS** *Shipping Vessel Heat Transfer Lifetime Optimization*, Funded by FreshRealm from July 2015 to January 2016 (CSL was PI)
4. **Lengsfeld CS** *Material Fatigue Analysis*, Funded by Johns Manville at **\$13,931** from November 2014 to April 2015 (CSL was PI)
5. **Lengsfeld CS** *Phase II SBIR: Turbine Blade Cooling Optimization*. Funded by NASA. Subcontract from Micro Cooling Concepts at **\$75,000** from May 2012 to March 2014 (CSL was PI)
6. McDermott WE, and **Lengsfeld CS**, 1/10th Scale High Pressure HIPSOG Based COIL. Funded by the Missile Defense Agency from March 2010 to June 2011. University of Denver subcontract from Directed Energy Solutions, Colorado Spring for **\$120,000** (CSL was co-PI)
7. McDermott WE, and **Lengsfeld CS**, *Phase I-Year 2: High Pressure Close-Coupled Singlet Oxygen Generator*. Funded by the Department of Defense Joint Technology from May 2009 to April 2011. University of Denver subcontract from Directed Energy Solutions, Colorado Spring for **\$45,000** (CSL was co-PI)
8. **Lengsfeld CS**, Shoureshi RA, and Cizek A, *Engineering of Extreme Sports: Teacher Training and Distance Education Program*, Funded by the Daniels Foundation from December 2009 to June 2011 at **\$56,000** (CSL was PI)
9. **Lengsfeld CS**, Taban F, and Cizek A, *Engineering of Extremes Sports Student Scholarship, Teacher Training and Distance Education Program*, Funded by the Dorr Foundation from July 2009 to December 2010 at **\$20,000** (CSL was PI)
10. **Lengsfeld CS**, and Cizek A, *Engineering of Extremes Sports Student Scholarship and Teacher Training*, Funded by Excel Energy Foundation from June 2009 to June 2010 at **\$10,000** (CSL was PI)
11. McDermott WE, and **Lengsfeld CS**, *Environmental nozzle jet modeling*, Funded by Neumann Systems Group, Colorado Springs, July 2009 to September 2009 at **\$4,000** (CSL was co-PI)
12. **Lengsfeld CS**, *Student Support for ICLASS 2009*. Funded by the National Science Foundation from June 2009 to May 2010 at **\$10,000** (CSL was PI)

13. McDermott WE, and **Lengsfeld CS**, *Phase I SBIR: Improved Pressure Recovery of the ABL*. Funded by the Missile Defense Agency from March 2009 to September 2009. University of Denver subcontract from Directed Energy Solutions, Colorado Spring for **\$28,500** (CSL was co-PI)
14. **Lengsfeld CS**, and Cizek A, *Engineering of Extremes Sports Student Scholarship*, Funded by Excel Energy Foundation from June 2008 to June 2009 at **\$10,000** (CSL was PI)
15. McDermott WE, **Lengsfeld CS**, *Phase I-Year1: High Pressure Close-Coupled Singlet Oxygen Generator*. Funded by the Department of Defense Joint Technology from March 2008 to February 2009. University of Denver subcontract from Directed Energy Solutions, Colorado Spring for **\$46,000** (CSL was co-PI)
16. Cizek A, **Lengsfeld CS**, and Gilbert J, *Making of a Scientist/Making of an Engineer Combined Student Scholarships*, Funded by Excel Energy Foundation from June 2007 to June 2008 at **\$7,500** (CSL was co-PI)
17. Cizek A, **Lengsfeld CS**, and Gilbert J, *Making of a Scientist/Making of an Engineer Combined Student Scholarships*, Funded by Lockheed Martin from June 2007 to June 2008 at **\$1,000** (CSL is co-PI)
18. Stencil R, **Lengsfeld CS**, and Gilbert J, *Making of a Scientist/Making of an Engineer Combined Student Scholarships*, Funded by Rocky Mountain Space Consortium. MOE portion was **\$2,500**, June 2007 (CSL was PI)
19. Pourkamali S, Kumosa M, **Lengsfeld CS** and YI Y-B, *NUE: Development of An Interdisciplinary Nano-Engineering Undergraduate Curriculum At The University Of Denver*. Funded by the National Science Foundation from November 2008 to October 2010 at **\$198,657** (CSL was co-PI).
20. McDermott WE, **Lengsfeld CS**, *STTR Phase II: Close coupling of excited oxygen with iodine injection in coil lasers*. Funded by the Missile Defense Agency from August 2007 to Aug 2010. University of Denver subcontract from Directed Energy Solutions, Colorado Spring at **\$331,301** (CSL was co-PI)
21. Shoureshi RA, and **Lengsfeld CS**, *Technology Commercialization Proof of Concept Grant: Wearable Gait System for Fall Prevention*. Funded by the State of Colorado Office of Economic Development August 2007 to November 2009 at **\$81,980** (CSL was coPI)
22. Shoureshi RA, **Lengsfeld CS**, Gauthier-Dickey C, and Grothoff C. *Innovations: Innovative Partnership for Job Creation and Employment*. Funded by the US Department of Labor and Employment via a subcontract from the MetroDenver MetroDenver WIRED Initiative from July 2008 to November 2009 at **\$500,000** (CSL was co-PI and Program Manager)
23. Shoureshi RA, and **Lengsfeld CS**, *Jumpstart: Innovative Partnership for Educating Colorado's Aerospace & Bioscience Workforce*. Funded by the US Department of Labor and Employment via a subcontract from the MetroDenver WIRED Initiative from April 2007 to November 2008 at **\$500,000** (CSL was co-PI and Program Manager)
24. McDermott WE, and **Lengsfeld CS**, *STTR Phase I: Close coupling of excited oxygen with iodine injection in coil lasers*. Funded by the Missile Defense Agency from Sept 2006 to Feb 2007. University of Denver subcontract from Directed Energy Solutions, Colorado Spring for **\$32,830** (CSL was co-PI)
25. **Lengsfeld CS**, and Wiktorowicz JE, *Micro incubator for bacterial infectious agents*, submitted to the National Academies/Keck Foundation, Funded by the National Academies/Keck Foundation from May 2006 to Dec. 2008. University of Denver subcontract from JW at University of Texas Medical Center for **\$50,000** (CSL is PI)
26. Shoureshi R, and **Lengsfeld CS** *Center for Assistive Technologies*, Funded by the Department of Health and Human Services – Rural Health Division from August 2005 to July 2008 at **\$200,000**. (CSL was co-PI)

27. **Lengsfeld CS**, and Anchordoquy TJ, *Collaborative Research: Improved synthetic vectors by electrostatic co-extrusion*. Funded by the National Science Foundation from August 2005 to July 2009 at **\$500,000**. (CSL was PI)
28. **Lengsfeld CS**, *REU Grant Supplement: Circumventing Plasmid DNA Shear-Induced Degradation*. Funded by the National Science Foundation from June 2004 to May 2005 at **\$11,896**. (CSL was PI)
29. **Lengsfeld CS**, *Equipment Grant Supplement: Circumventing Plasmid DNA Shear-Induced Degradation*. Funded by the National Science Foundation from March 2004 to Feb 2005 at **\$17,254**. (CSL was PI)
30. Laz P, **Lengsfeld CS**, and Rullkoetter P, *Advanced Technology for Computer-Aided Engineering*. Funded by the Colorado Institute of Technology from April 2004 to April 2005 at **\$570,991**. (CSL was co-PI)
31. **Lengsfeld CS**, and Anchordoquy TJ, *Collaborative Research: Circumventing Plasmid DNA Shear-Induced Degradation*. Funded by the National Science Foundation from Nov 2002 to Oct 2005 at **\$470,000**. (CSL was PI)
32. **Lengsfeld CS**, and Malone-Back, S, *Clare Booth Luce Undergraduate Scholarship*, Funded by the Henry Luce Foundation from August 2003 to July 2004 at **\$9,649** (CSL was PI)
33. Shoureshi R, Moorhead J, Peterson J, Hertzberg J, James S, Grainger D, **Lengsfeld CS**, Ambron S, McHugh M, Freed J, Stansbury J, and Carpenter, J., *Bioscience Program Seed Grant Administration*. Funded by the Colorado Commission on Higher Education from July 2001 to July 2002 at **\$500,000**. (CSL was co-PI)
34. DeLyser RR, Rosa A, Rullkoetter P, **Lengsfeld CS**, Whitman R, and Edelstein G, *Effective Learning Styles*. Funded by the Sturm Foundation from June 2000 to May 2002 at **\$230,000** (CSL was co-PI)
35. Another **\$149,750** in various corporate equipment donations

Internally Funded

1. Rullkoetter P and **Lengsfeld CS**, *Fluid-Solid Modeling of Micro Particle Transport within Hole Attachment of a Total Joint Replacement Device*, Funded by the DU PROF Fund from July 2013 to June 2014 at **\$30,000** (CSL was coPI)
2. **Lengsfeld CS**, *Identification of Small Particle Formation by Cavitation and Mitigation*, Funded by the Knobel Institute for Longevity and Health Pilot Research Award, Funded from April 2013 to June 2014 at **\$31,447** (CSL was PI)
3. **Lengsfeld CS**, *Global Sizing and Velocimetry System with PIV software*, funded by Research Equipment Fund by the Associate Provost for Research, December 2010. **\$100,288**. (CSL was PI)
4. **Lengsfeld CS**, *Investigating Biomaterials as Implantable Chemomechanical Pressure Transducers*, Funded by the DU PROF Fund from June 2008 to June 2010 at **\$15,000**. (CSL was PI)
5. **Lengsfeld CS**, and Shahenn S, *Enhancing Resources for the DU Initiatives for Biophysics and BioNanotechnology*. Funded by the Women's Library Association Collection Development Program from December 2008 to January 2009 for **\$3,330**. (CSL was PI)
6. **Lengsfeld CS**, and Kraus J, *Mechatronics and Nanotechnology Library Acquisitions*. Funded by the Women's Library Association from January to December 2005 at **\$8,000**. (CSL was PI)
7. **Lengsfeld CS**, *Improving Drug Delivery to Patients on Mechanical Ventilators*, Funded by the DU PROF Fund from July 2004 to June 2005 at **\$14,520** (CSL was PI)
8. Reed C, and **Lengsfeld CS**, *Putting the Touch on Somatosensory Cortex: a Device for fMRI*, Funded by the DU Interdisciplinary Proposal Preparation Fund from Jan 2001 to Dec 2002 at **\$8,000**. (CSL was co-PI)

9. **Lengsfeld CS**, *Maximization of Undergraduate Laptop use in the Engineering Common Curriculum*.
Funded by the Center for Teaching and Learning from Jan 2000 to Dec 2001 at **\$23,800** (CSL was PI)
10. Plus 21 internally funded undergraduate research fellowships from Partners in Scholarship totaling more than **\$44,000** (CSL was principle faculty partner to all)

UNIVERSITY SERVICE ACTIVITIES

University Level

COVID-19 Coordinator response team (July 2020 to present)
 COVID -19 Academic Unit and Program Assessment Taskforce (Chair, May 2020 to present)
 COVID -19 Residential Housing Taskforce (co-Chair, May 2020 to September 2020)
 COVID -19 Events Taskforce (co-Chair, May 2020 to present)
 COVID -19 Fall Logistics Committee (Chair, May 2020 to September 2020)
 COVID -19 Steering Taskforce (May to July 2020)
 COVID -19 Health care Taskforce (April to July 2020)
 COVID -19 Financial strategies Taskforce (May to July 2020)
 USNWR Rankings Taskforce (Chair, September 2019 to present)
 Vice Provost for Internationalization Search Committee (Chair until became interim provost, March 2019 – July 2019)
 Vice Provost for Faculty Affairs Search Committee (Chair, March 2019 – June 2019)
 Web Governance Committee (Dec 2016 to present)
 DU Impact 2025 Implementation Steering Committee (Team leader, August 2016 to present)
 Sr. Associate Provost for Budget, Planning and Analysis Search Committee (Chair, May 2016- Sept 2016)
 DU Impact 2025 Implementation Planning Team (Facilitator, March 2016 to June 2016)
 Abrasive Conduct Taskforce (Chair, Sept 2015 – June 2016)
 Transformative Directions: Shape of Knowledge (Dec 2014 – Dec 2015)
 Strategic Planning Steering Committee (2014)
 External Relations Committee (2014 - 2015)
 Advancement Day Panelist (Fall 2014)
 Co-Chair Faculty and Staff Annual Giving Campaign (2014/15)
 Author – Parent & Family Fund (Spring 2014)
 Chancellor’s Search Committee (September 2004 to June 2005)
 Vice Chancellor and CIO Search Committee (September 2010 to September 2011)
 Associate Provost for Research Search Committee (Feb to May 2009)
 OSRP Director Search Committee (Summer 2008)
 UPAC – Mission and Goals Committee (2006 to 2008)
 Research Task Force Committee (2005 to 2006)
 Provost/Chancellor Committee, Position Paper for the Center on Aging (Dec 2009 to February 2010)
 Strategic Planning Committee for the Center on Aging (subcommittee chair June 2010 to June 2011)
 Provosts Strategic Planning Committee on External Research Funding (April 2011 to June 2011)
 Renew DU, Teaching Incubator (Feb. 2012 to Jan 2013)
 University Technology Research Committee (April 2012 to present)
 Intellectual Property Working Group (Spring 2013)
 Creativity & Entrepreneurship Redesign Committee (Spring 2013)
 PROF Sciences Proposal Review Chair (2012)
 Member of the Patent Right Committee (2009 to Present)
 Faculty Senator At-Large (Finance committee, 2003 to 2005)
 Department of Physics and Astronomy Faculty Search committee (2007/08 and 2008/09)
 Graduate and Undergraduate Graduation Marshall (annually)

Divisional Level

RSECS Sr. Associate Dean Search Committee (March 2016 to June 2016)
RSECS Dean Search Committee (Nov 2013 to May 2015)
SECS Faculty Committee (Chair, Jan 2012 to January 2015)
- author of Constitution, lead division wide Strategic Planning, lead a faculty discussion on Teaching Load providing input to the Dean to develop guidelines and policies to establish transparency within the division and departments.
Deans Faculty Advisory Committee (2003/04)
NSME Faculty Committee (2000 to 2003)
Ritchie School Dean Search Committee (Sept. 2013 to June 2015)
SECS Director Search Committee (2001/02)
SECS Tenure & Promotion Committee (2006 to 2008, 2010/11)
Ammi Hyde Interview Team Leader (2003 to 2005)

Departmental Level

SWE Faculty Advisor (1999 to 2015)
Shop Safety Committee (member 2004 to 2014, Chair 2008 to 2014)
Order of the Engineer, Faculty Advisor and Annual Organizer (2004 to 2015)
Graduate Coordinator Bioengineering Program and program evaluator (2005 to 2014)
Chair, ME Curriculum Committee (2001 to 2005)
MME Undergraduate Curriculum Improvement Initiative (2013)
MME 1-Year Masters Curriculum Initiative Implementation (2012)
Computer Science Tenure & Promotion Committee (2001/12)
ECE Tenure & Promotion Committee (2007/08)
MME Tenure & Promotion Committee (2005 to present, Chair 2010/11)
Mechanical Engineering Faculty Search Committee (Chair 2005, member 2009/10, 2010/11, 2011/12)
Engineering – Library Liaison/Advisory Board (1999 to 2005, 2006 to 2013)
UDCC Mentor (2000 to 02, Coordinator 2003 to 2005)

COURSES & EVALUATIONS

Freshman Level / Non-Major

Concepts and Practices I (Introduction to Mechanical Engineering Design and CAD)
Concepts and Practices II (Introduction to Electrical Engineering)
Tech 21: Climate Change for Non-Majors
Creativity and Entrepreneur Living and Learning Community

Sophomore Level

Applications III (Instrumentation Laboratory Course)

Junior Level

Introduction to Fluid Mechanics (I and II)
Introduction to Heat Transfer

Senior Level / First Year Graduate

Computational Fluid Dynamics
Pharmaceutical Biofluids
Space Systems Design I and II
Nanobiotechnology
Good Laboratory Practices/Good Manufacturing Practices

Advanced Graduate

Advanced Computational Fluid Dynamics
Advanced Fluid Dynamics
Micro Heat Exchangers
Fluid Solid Interaction Modeling

Total Quarter Hour Generation > 5,700

Average instructor rating = **5.1/6.0 (excellent)**
Department average instructor rating = 4.9/6.0.
Average course rating = **4.9/6.0 (excellent)**
Department average instructor rating = 4.7/6.0

RESEARCH STUDENTS ADVISED

Summary

PhD Students: 11 completed (27% Female)
MS Students: 12 completed (46% Female, 15% Native American)
UGRAs: 25 with an average 2-year experience (44% Female, 8% Native American, 8% first gen)
Res. Engineers: 3
Post Doc: 1
Senior Design: 13 projects

Doctoral students advised/employed

Rafael Rodriguez (University of Denver)

Graduation: December 2018

Thesis: *Development of a computational system to optimize wind farm layout*

Advisor: CS Lengsfeld

Employment: Postdoc, Syracuse University

Donn Sederstrom (University of Denver)

Graduation: August 2016

Thesis: *Methods and Implementation of Fluid-Structure Interaction Modeling for an Industry-Accepted Design Tool*

Advisor: CS Lengsfeld

Employment: CFD Engineer, Johns Manville Corporation

Adam Pender (University of Denver)

Graduation: June 2016

Thesis: *Novel Analysis and Test Method for Gas Filled Tubes Subjected to Pyrovalve Shock*

Advisor: CS Lengsfeld and Matt Gordon

Employment: Propulsion Engineer, Lockheed Martin Space Systems Company

James Lee (University of Denver)

Graduation: June 2014

Dissertation: *Improved Cryogenic Propellant Storage for Long-Range Space Missions*

Advisors: CS Lengsfeld

Employment: Systems Engineer, Lockheed Martin Space Systems Company

Leah Raffaelli (University of Denver)

Graduation: December 2013

Dissertation: *System Optimization of Large Scale Algae Production*

Advisors: CS Lengsfeld

Employment: Systems Engineer, Lockheed Martin Space Systems Company

Peter Higgins (University of Denver)

Graduation: August 2012

Dissertation: *Micro channel cooler performance improvement by insonation*

Advisor: CS Lengsfeld

Employment: Metro State College, Lecturer

Matt Opgenorth (University of Denver)

Graduation: December 2010

Dissertation: *Computational Fluid Dynamic Optimization and Design for the Airborne Laser System*

Advisor: CS Lengsfeld

Employment: Principle Aerodynamics/CFD Engineer Sierra Nevada Corporation

Michelle Zeles-Hahn (University of Denver)

Graduation: March 2010

Dissertation: *Electrohydrodynamic Atomization as a Technique for Pharmaceutical Manufacture and Delivery*

Advisor: CS Lengsfeld

Employment: Lecturer, University of Denver

Chris Sponheimer (University of Denver)

Graduation: June 2010

Dissertation: *Influence of Compressible Aerogel Electrodes on the Properties of an Electrochemical Cell*

Advisor: CS Lengsfeld

Employment: Technical Specialist – Finnegan, Henderson, Farabow, Garrett & Dunner, LLP

Daniel Jarmer (Dept. of Chemical and Biological Engineering/CU Boulder)

Graduation: July 2004

Dissertation: *Precipitation with a compressed-fluid anti-solvent injector development and applications to the design of particulate pharmaceuticals*

Advisor: TW Randolph and CS Lengsfeld

Employment: Senior Scientist, Eli Lilly, North Carolina

Yvonne Lentz (University of Colorado Health Sciences Center)

Graduation: August 2005

Dissertation: *Shear-induced degradation of plasmid DNA*

Advisor: CS Lengsfeld and TJ Anchordoquy

Employment: Senior Scientist, Genentech, San Francisco, CA

Masters students advised/employed

Nathan Huber (University of Denver)

Graduation: March 2015

Thesis: *Passive Liquid Draw using Micro Needles*

Advisor: CS Lengsfeld

Employment: PADT, Arizona/Denver

Houman Babazadehrokni (University of Denver)

Graduation: August 2014

Thesis: *High Speed Imaging of Vials Subjected to Mechanical Shock*

Advisor: CS Lengsfeld

Employment: CFD Engineer, Afton Chemical Ltd, Richmond VA

Renee Worden (University of Denver)

Graduation: August 2013

Thesis: *Optimization of spray particle distribution for reliability delivery to the deep lung*

Advisor: CS Lengsfeld

Employment: Modification Engineer at Aviation Technical Services

Donn Sederstrom (University of Denver)

Graduation: March 2013

Thesis: *Cavitation in Pharmaceutical Manufacturing and Shipping*

Advisor: CS Lengsfeld

Employment: went on to PhD at University of Denver

Justin Jacobs (University of Denver)

Graduation: August 2012

Thesis: *Towards a Fluid Solid Interaction Model of a Dynamic Lung*

Advisor: CS Lengsfeld

Employment: CFD Engineer, Patterson & Cooke, Golden Colorado

John Giarratano (University of Denver)

Graduation: June 2012

Thesis: *Protein Nucleated Cavitation in Ultrasonic Nebulizers Forming Non-visible Aggregates*

Advisor: CS Lengsfeld

Employment: Founder, Inland Island Yeast Laboratories

Lisa Weber (University of Denver)

Graduation: August 2011

Thesis: *Pulmonary Particle Deposition in Relation to Age, Body Weight, and Species*

Advisor: CS Lengsfeld

Employment: currently PhD student at Colorado State University

Rachel Fulstone (University of Denver)

Graduation: August 2008

Thesis: *Micro liter Incubator Array for High Throughput Pathogenesis Studies*

Advisor: CS Lengsfeld

Employment: Systems Engineer, Terumo BCT

Matt Opgenorth (University of Denver)

Graduation: August 2008

Thesis: *Development of an Automated Design Tool for COIL Lasers*

Advisor: CS Lengsfeld

Employment: went on to Ph.D. at University of Denver

Ian Welch (University of Denver)

Graduation: August 2007

Thesis: *Wearable Gait Sensor System*

Advisor: CS Lengsfeld and RA Shoureshi

Employment: Trimble Navigation, Denver, Colorado

Michelle Zeles-Hahn (University of Denver)

Graduation: August 2006

Thesis: *Effects of Atomization Techniques on Macromolecules*

Advisor: CS Lengsfeld and TJ Anchordoquy

Employment: went on to Ph.D. at University of Denver

Leslie Worden (University of Denver)

Graduation: August 2005

Thesis: *Circumventing shear-induced degradation of plasmid DNA*

Advisor: CS Lengsfeld and TJ Anchordoquy

Employment: Engineer, Boeing Corporation, Seattle, WA

Research Engineers or Postdoc advised/employed

Rafael Rodriguez Research Associate/ Postdoc

October 2018 to November 2019

Justin Jacobs Research Engineer

September 2012 to December 2012

Michael Savoie

Research Engineer October 2008

to September 2009

Ian Welch Research Engineer

August 2007 to Dec 2008

Undergraduate researchers advised/employed

Joe Tripp

Emily Turner

Elizabeth Nottingham

Ali Ellickson

Caitlan Barnes

Stephen Shirley

Leslie Worden

Adam Ross Clark

Renee Worden

Jamie Rhoads

Thanh Pham

Donn Sederstrom

Julie Crocket

Ben Filas

Nate Germann

Willie Kaplan

Brandon Oliver

Irene Wilson

Rachael Darby

Kelley Brinkley

Meagan Puryear

Keith McIntyre

Ryan Jones

Tamima Jiru

Corinne Adams

Undergraduate senior design projects advised:

2011/2012	Endotracheal Cuff Pressure Measurement System	(3 students)
2010/2011	Endotracheal Tube Project	(4 students)
2009/2010	SAE Baja	(3 students)
2007/2008	Sophomore Class Design Project for Retention	(8 to 10 students)
2007/2008	RGO Project	(4 students)
2004/2005	Gait Sensor Project	(3 students)
2003/2004	Human Powered Vehicle	(5 students)
2002/2003	Human Powered Vehicle	(5 students)
2002/2003	Apparatus for Measuring Molecular Relaxation	
2001/2002	Apparatus for Measuring DNA Shear Induced Degradation	
2001/2002	Automated Brewery	
2000/2001	Ski Binding	
1999/2000	The Smart Atomizer	