




City of Seattle Boards & Commissions Notice of Appointment

Appointee Name: Tara L. Henriksen		
Board/Commission Name: Seattle Fire Code Advisory Board		Position Title: Chemical Engineer
<input type="checkbox"/> Appointment OR <input checked="" type="checkbox"/> Reappointment		Council Confirmation required? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Appointing Authority: <input type="checkbox"/> Council <input checked="" type="checkbox"/> Mayor <input type="checkbox"/> Other:	Date Appointed: 9/1/2021	Term of Position: * 9/1/2021 to 8/31/2024 <input type="checkbox"/> Serving remaining term of a vacant position
Residential Neighborhood: Seattle	Zip Code: 98125	Contact Phone No.: [REDACTED]
Background: <p>Dr. Tara Henriksen holds a doctorate in chemical engineering. Dr. Henriksen has direct knowledge of many relevant areas regulated by the Seattle Fire Code, including combustible liquids, fuel dispensing facilities, and flammable finishes. She is a certified fire and explosion investigator who evaluates and analyzes chemical processes, heat transfer, and fire dynamics to investigate and prevent industrial fires and accidents.</p> <p>Dr. Henriksen brings a successful track record working on technical boards, including serving on the two National Fire Protection Association (NFPA) technical committees: Hydrogen Technology (2010) and Vehicular Alternative Fuel Systems (2010-present). She is also a member of the International Association of Arson Investigators, the National Association of Fire Investigators, and a senior member of the American Institute of Chemical Engineers.</p>		
Authorizing Signature (original signature):  Date: 3/9/2022	Appointing Signatory: Bruce A. Harrell Mayor of Seattle	

*Term begin and end date is fixed and tied to the position and not the appointment date.



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Tara L. Henriksen, Ph.D., PMP, CFEI, CFI

Executive Director, Chemical Engineering

SUMMARY

Dr. Tara Henriksen is a project director and engineering consultant who leads multidisciplinary teams of scientists and engineers on product development projects, failure analysis projects, and fire and explosion investigation and testing. She has industry expertise working with clients in raw material production, chemical, consumer product, pharmaceutical, food and beverage, wood processing and oil and gas industries. She specializes in the evaluation of engineering and safety issues related to hazardous materials accidents, chemicals, manufacturing & processing technology. She specializes in large chemical process failures and has provided expert testimony on issues related to self-heating, spontaneous combustion, equipment failure, fire investigation, explosion investigation, and accidental chemical releases. She holds a Ph.D. from the University of Utah in Chemical Engineering, B.S. in Mathematics and an A.S. in Chemistry.

Dr. Henriksen is also a Certified Fire and Explosion Investigator (CFEI) and Certified Fire Investigator (CFI) who uses her knowledge of fire dynamics, heat transfer, fluid mechanics, chemistry and chemical engineering in conducting fire origin and cause investigation and explosion testing and analysis. Her investigations involve the evaluation and analysis of chemical processes and industrial equipment, dust explosions, vapor cloud explosions, and accidental chemical releases. Her research and testing expertise has included explosion testing using high order explosives, spontaneous combustion testing, dryer testing, hot particle ignition testing, and chemical composition testing.

As a process safety expert, Dr. Henriksen has applied her knowledge of engineering to conduct safety audits of processing operations, field operations, process hazard analysis (PHA), layer of protection analysis (LOPA), and risk assessment for processes and products. Dr. Henriksen also investigates and opines on issues related to patent infringement and design defect. She has also consulted as a product development expert on global product development efforts within the US and China, and provided overall program strategy on product development, management of product risk, and resolution of regulatory compliance issues.

Dr. Henriksen's doctoral research encompassed the study of hydrocarbon pool fires, inverse diffusion flames, premixed flames and laminar diffusion flames. She gained expert knowledge in the application of laser diagnostics in combustion reaction, refractive index determination, and the evaluation of puffing frequency of pool fires. Dr. Henriksen has expertise conducting small and large-scale fire and explosion testing of products and evaluating combustions processes using flow visualization and design software.



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EDUCATION AND REGISTRATIONS

Doctor of Philosophy, Chemical Engineering, University of Utah, 2007

Bachelor of Science, Mathematics, University of Utah, 2003

Associate of Science, Chemistry, University of Utah, 2003

EIT Certification, State of Illinois, No. 061.033904

Certified Fire and Explosion Investigator, NAFI, No. 14035-7798

Hazardous Waste Operations and Emergency Response (HAZWOPER) Certification, IESMC

Emergency Response Certification, Fire Investigation 1A, IESMC

DOT HM-126F Hazardous Materials Certification, DOT

Fundamentals of Process Safety Certification, ASME

Certified Project Management Professional (PMP), PMI

PROFESSIONAL EXPERIENCE

Doyen Consulting LLC, 2016- current

Project Director. Conducts failure analysis, root cause analysis, fire and explosion testing and analysis. Provides consultation on product development, regulatory compliance, testing requirements, design solutions, and discovering root causes of failures. Duties include drafting code language on committees at the federal and state level. Investigations involve the evaluation and analysis of chemical processes and industrial equipment, dust explosions, vapor cloud explosions, and accidental chemical releases. Additional duties include equipment commissioning, energy efficiency analysis, and design modification recommendation. Research and testing expertise includes explosion testing using high order explosives, spontaneous combustion testing, hot particle ignition testing, and chemical composition testing. Applies knowledge of chemical engineering to conduct safety audits of processing operations, field operations, process hazard analysis (PHA), layer of protection analysis (LOPA), and risk assessment for processes and products. Responsible for designing and implementing internal audit programs, leading teams of engineers and project managers in achieving regulatory compliance and internal testing objectives. Partners with senior management in conducting investigative research into a client's business processes to identify bottlenecks and improve product/program efficiency.

Nytec, Inc. 2016

Director of Strategic Projects. Responsible for leading a global product development program in collaboration with the General Manager, Design Director and Director of Sales. Responsible for driving operational level team processes that determined how projects were managed, and which tools were used by the design and engineering teams to ensure that projects were delivered on time and on budget. Provided daily direction with a 'from the ground up' management style for quality control and internal audit activities related to achieving customer and regulatory compliance with ASTM, IEEE, & ANSI standards. Product portfolio included: drug and vaccine



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carriers, consumer wearable electronics, design of a research and testing facility for zero G testing, and a passive consumer electronics monitoring system.

CASE Forensics Corporation, 2010 to 2016

Principal Engineer/Project Manager. Evaluated engineering and safety issues related to hazardous chemical accidents and chemical technology. Conducted fire origin & cause and explosion analysis using knowledge of fire dynamics, heat transfer, fluid mechanics, chemistry, and chemical engineering. Applied knowledge of chemical engineering to investigate and prevent accidents. Specialized in the evaluation of engineering and safety issues related to hazardous chemicals accidents and chemical technology. Conducted investigations involving the evaluation and failure analysis of chemical processes and industrial equipment, spontaneous combustion, dust explosions, vapor cloud explosion and accidental chemical releases, as well as design defect and patent infringement. Conducted peer review of technical reports for junior engineers and served as a mentor to junior engineering staff. Built a book of business as a self-starting entrepreneur.

AICHE, 2009 to Present

Program Director, National Safety Coordinator. The competition involves innovative chemically-powered cars designed by student teams from colleges and universities across the United States. Dr. Henriksen is responsible for enforcing the safety standards of the program, drafting and reviewing job safety analysis (JSA) templates from entrants, testing student's core engineering competency, evaluating the hazards inherent in design, and updating competition safety standards as appropriate.

Exponent FAA, 2008 to 2010

Engineering Consultant. Applied knowledge of chemical engineering principles to chemical processing, forensics and product liability cases. Specialized in origin and cause evaluation as it applied to the chemical processing industry. Analyzed engineering and safety issues related to hazardous chemical accidents and chemical technology against industry standards. Conducted investigations involving the evaluation and failure analysis of chemical processes and industrial equipment, dust explosions, and chemical releases. Research expertise included the optimization of chemical process operations, process hazard analysis (PHA), layer of protection analysis (LOPA) and risk assessment. Served as a project manager on several origin and cause investigations, where she managed schedule, cost, personnel, and quality of deliverables. Clients included BP, Dow Chemical, Chevron, Nova Pharmaceuticals & others.

University of Utah, 2004 to 2007

Graduate Research Assistant. Researched the study of hydrocarbon pool fires, inverse diffusion flames, premixed flames, and laminar diffusion flames. Specialized in the application of laser diagnostics in the analysis of combustion reactions, refractive index, and the evaluation of the puffing frequency of pool fires. Utilized laser-induced incandescence to study soot concentration, and laser induced fluorescence to study the location of the reaction zone relative



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to soot sheets in turbulent pool fires. Experienced with designing and conducting small and medium scale fire tests and evaluating combustion processes using flow visualization and design software.

National Science Foundation, 2001 to 2003

Research Analyst. Forged a collaboration between the Cystic Fibrosis Foundation and the University of Utah Math Department to model complex systems, analyze system dynamics and survival probabilities for patients with CF. Tested the accuracy of the single year assessment of the health of patients with CF by validating 5 dependent variables.

TEACHING EXPERIENCE

ChFE 3353 Fluid Mechanics, University of Utah, Fall 2006

Teaching Assistant. This class comprised an introduction of fluid statics; application of conservation of mass, energy, and momentum to basic fluid mechanics problems; introduction to compressible flow, potential flow, boundary layer and dimensional analysis.

ChFE 6353 Fluid Mechanics, University of Utah, Fall 2005

Teaching Assistant. This course provided an introduction to tensor analysis and derivation of governing partial differential equations. Solution of problems in Newtonian, laminar, incompressible flow are taught. Advanced experience on problems of potential flow, turbulence, non-Newtonian flow, and compressible flow.

Engineering Matters, Youth Education, Summer 2005, Summer 2006

Professor. The goal of this course was to learn about engineering as a career. Students were taught basic engineering principles; electricity, electrolysis, forces of gravity and drag, energy, chemical properties, and safety. They were educated about the various career paths in engineering, and were exposed to civil, mechanical, electrical, chemical and environmental engineering subjects, activities and demonstrations.

PUBLICATIONS

Lewis, K.H., Murphy, D.M., Scheiff, S., Henriksen, T., “Fish Tank Heater Fire Analysis, 14th International Fire and Materials Conference Proceedings, May 2015, pg. 946-956.

Henriksen, T. “Clinical Trials within the U.S. – Skin Transplants (burns). Encyclopedia of Stem Cell Research, 2nd Edition. (2015)

Henriksen, T. “University of Washington.Hutchinson Cancer Center,” Encyclopedia of Stem Cell Research, 2nd Edition. (2015)

Henriksen, T. “Tragic Chemical Accidents, Combustible Dust Hazards,” American Chemical Society, ACS Webinar, September 2014.



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Way, P. , Henriksen, T. , “An Assessment of the Ability of Light Bulbs to Ignite Various Types of Cardboard, ” Fire and Materials, 12th International Conference, January 2011.

Lewis, K., Biggerstaff, N., Henriksen, T., “Case Study: Safety device failure results in tanker BLEVE,” Mary Kay O’Connor Process Safety Center International Symposium, p. 560, October 2010.

Henriksen T.L., Nathan G.J., Alwahabi Z.T., Qamar N., Ring T.A., Eddings E.G. "Planar Measurements of Soot Volume Fraction and OH in a JP-8 Pool Fire." Combustion and Flame, 156 (7), 1480-1492, 2009.

Henriksen T.L., Nathan G.J., Ring T.A., Eddings E.G. "Puffing Frequency and Soot Extinction Correlation in JP-8 and Heptane Pool Fires." Combustion Science and Technology, 180 (4) 699-712, 2008.

Henriksen T.L., Nathan G.J., Alwahabi Z.T., Spinti J., Smith P.J., Eddings E.G. "Soot Volume Fraction from Extinction in JP-8 and Heptane Pool Fires." 4th Australian Conference on Laser Diagnostics in Fluid Mechanics and Combustion, The University of Adelaide, South Australia, December 7-9, 2005.

PRESENTATIONS

“The CHEME Car Competition: Furthering Undergraduate Education in Process Safety.” AICHE National Meeting, Salt Lake City, Utah, 2010

“Determination of Soot Refractive Index as a Function of Height in an Inverse Diffusion Flame.” 5th US Combustion Meeting, Western States Section of the Combustion Institute, San Diego, CA. 2007.

“Soot Volume Fraction from Extinction in JP-8 and Heptane Pool Fires.” WSS/CI Fall Meeting, Stanford, CA. 2005.

SOCIETIES AND MEMBERSHIPS

Project Management Institute, 2016-present

Seattle Fire Code Advisory Board, City of Seattle, 2015-present

NFPA 2 Hydrogen Technology Committee Member, 2010-2014

NFPA 52, Vehicular Natural Gas Fuel Systems Code, Committee Member, 2014-current

American Institute of Chemical Engineers (AIChE)

International Association of Arson Investigators (IAAI)

National Association of Fire Investigators (NAFI)

Seattle Fire Code Advisory Board

15 Members: Pursuant to Ordinance 124707, all members subject to City Council confirmation, 3-year terms:

- 15 Mayor- appointed

Roster:

*D	**G	RD	Position No.	Position Title	Name	Term Begin Date	Term End Date	Term #	Appointed By
			1.	Architect	Vacant				Mayor
6	F		2.	Chemical Engineer	Tara L. Henriksen	9/1/21	8/31/24	4	Mayor
6	F		3.	Mechanical Engineer	Rae Anne Rushing	4/1/21	3/31/24	6	Mayor
6	M		4.	BOMA	Shawn Wood	N/A	3 years from Council confirmation	1	Mayor
			5.	Insurance Industry	Vacant				Mayor
1	F		6.	Marine Industry	Amy Liu	9/24/21	9/23/24	2	Mayor
6	M		7.	Port of Seattle	Chris Todd	8/15/20	8/14/23	2	Mayor
6	M		8.	Manufacturing/ Warehouse	Fritz Chess	6/1/22	5/31/25	3	Mayor
6	M		9.	Research Labs	Kurt Howell Lustig	6/1/22	5/31/25	3	Mayor
6	M		10.	Fire Protection Industry	Kevin Marr	8/15/20	8/14/23	2	Mayor
			11.	Public	Vacant				Mayor
			12.	Public	Vacant				Mayor
6	M		13.	Labor	Ricky Campbell	N/A	3 years from Council confirmation	1	Mayor
3	M		14.	Major Institutions	Hugo Sotelo	6/1/22	5/31/25	3	Mayor
2	F		15.	Services Industry	Carlene M. Comrie	5/15/20	5/14/23	2	Mayor

SELF-IDENTIFIED DIVERSITY CHART

	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)	
	Male	Female	Transgender	NB/ O/ U	Asian	Black/ African American	Hispanic/ Latino	American Indian/ Alaska Native	Other	Caucasian/ Non-Hispanic	Pacific Islander	Middle Eastern	Multiracial					
Mayor	9	4			1	1	1			10								
Council																		
Other																		
Total	9	4			1	1	1			10								

Key:

*D List the corresponding *Diversity Chart* number (1 through 9)

**G List *gender*, M= Male, F= Female, T= Transgender, NB= Non-Binary, O= Other, U= Unknown

RD Residential Council District number 1 through 7 or N/A

Diversity information is self-identified and is voluntary.