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ASBC Graduate Scholarship Jury

Nominating Christina Hahn for an ASBC Graduate Scholarship

Dear Reviewer,

I wish to nominate **Christina Hahn** for a 2016 ASBC graduate scholarship. I have known Christina for over 3 years as a student in my brewing courses, as an undergraduate worker in my lab and presently as a Masters student working under my direction. She is a very competent, motivated and professional student and someone I anticipate great things coming from when she enters the brewing industry. So, I urge you to award her an ASBC graduate scholarship to recognize her accomplishments and her potential.

Ms. Hahn began her studies at OSU as an undergraduate student in the fall of 2012 and graduated last June, cum laude, with a GPA of 3.6. She routinely ranked in the top 10% of her cohort. And, she won numerous awards in our department such as the Paul R. Elliker Scholarship, the Bob McCracken Jr. Memorial Scholarship, the Oregon Section of the Institute of Food Technologists Scholarship, in addition to the Kim Hutchinson Scholarship in Food Microbiology.

Unlike the traditional student who matriculates immediately after high school, Ms. Hahn spent 7 years working as a welder and pipe fitter before starting college. Her personal and professional maturity combined with these experiences set her apart from most of OSU's brewing students. On one hand she is entirely comfortable assembling and running brewing and/or food processing equipment in the pilot brewery while on the other hand she has a scientific curiosity about the research she is carrying out. Possessing both production/manufacturing confidence combined with scientific/technical skills makes her a powerful student and will ultimately result in her being a tremendous asset to the brewing industry.

Christina is involved in two research projects in my lab, one examines apple cultivar differences in (hard) cider quality and the other investigates the holistic effects of hops on beer bitterness. The former is a project she has lead since she was an undergraduate working in my lab, while the latter project began while as a graduate student in my lab. This later project examines the combined effects of hop acids, hop oxidation products and polyphenols on the bitterness of beer. With craft brewers using hops at level 10-20 times higher than routinely used for domestic lager beer the ability to measure and control beer bitterness has become increasingly difficult. Old methods such as the Bitterness Unit and measuring iso-alpha acids via HPLC do not offer a complete picture of beer's bitterness. By combining a range of different chemical/instrumental

approaches with sensory data, Christina's project will determine how these various hop-derived components work together to create bitterness, which in turn will allow brewers to more precisely control this attribute in the final product. The results from this project will be presented at the World Brewing Congress this summer.

Outside the lab, Christina is a visible student leader and an ambassador for our department. During her undergraduate studies she carried out the role of Brewmaster for the Food and Fermentation Club where she led students in brewing activities in the research pilot brewery. She also worked as an undergraduate research assistant in my lab with the title of Lead Brewer. In this role she directed the activities of 4 undergraduate students to carry out research operations in the research pilot brewery under the direction of Jeff Clawson. In an ambassadorial role for OSU Fermentation Science you will routinely see her helping myself and Jeff Clawson lead tours of the OSU research brewery to the public during Corvallis Beer Week, to industry visitors during their visits to campus, and to alumni as part of OSU Alumni Association's events. She has also been a visible participant in the biannual meetings of the Northwest Master Brewers Association of the America's meetings. She represents the University, our College and OSU FST at these events where students assist in helping run a portion of these large meetings (250-400 participants).

Christina is keenly aware of how commercial/industrial work can connect to one's education and ultimately build a foundation for future success. To that end, she has had very successful experiences working at Trillium FiberFuels here in Corvallis, Deschutes Brewery in Bend, OR, and Boston Beer Company in Boston, MA. The feedback from Boston Beer Co.'s Research & Development leader following Christina's 5-month internship in spring/summer 2014 was glowing. This autumn she will engage in a 6-month work experience with BeamSuntory. She thus serves as a role model for other students on how to incorporate industrial experiences with undergraduate and graduate education.

Christina is a standout student at Oregon State University. She is driven by academic and personal curiosity; she understands the value of higher education far greater than most; and she has the patience, stamina and desire to pursue a dream against many odds. Christina excelled as a student during her Bachelor of Science degree in Food Science & Technology and she is doing the same in the first 6 months of graduate school. When you take in her academic accomplishments, her success as a leader and role model, and her potential to contribute to the field of brewing science it is clear she is deserving of an ASBC Graduate Scholarship.

Sincerely,



Thomas H. Shellhammer
Northwestern Professor of Fermentation Science
Oregon State University