

UCDAVIS

Continuing and Professional Education

Master Brewers Certificate Program





Serious Programs for Serious Brewers



The Master Brewers Certificate Program at UC Davis Continuing and Professional Education is taught in a new, state-of-the-art classroom facility located at Sudwerk Brewing Company in Davis, Calif. While this world-class microbrewery is not a formal teaching facility, it does allow students the opportunity to observe brewing and packaging operations on Sudwerk's 65-barrel Steinecker system as part of the curriculum.

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For More Information

For general information, call toll free (800) 752-0881 (within the U.S.) or (530) 757-8777 (outside of the U.S.). For more specific program information, call (530) 757-8899 or email brewingprograms@ucdavis.edu.

For more information about this program or to apply, visit our website.

cpe.ucdavis.edu/brewing



facebook.com/UCDavisCPEbrewing





Professional Brewing Programs at UC Davis

With the continued growth of the brewing industry worldwide, owners and managers of major breweries, microbreweries and brew pubs can no longer afford to consider hiring untrained brewing staff. Employers continue to seek professionals who have been trained in the science and engineering of running a brewery operation, as well as those who know and understand the demands of the brewing industry.

UC Davis has been the leading provider of university-level qualification in brewing science and brewery engineering since 1964. As one of the world's most respected providers of brewing education, UC Davis Continuing and Professional Education offers world-renowned brewing programs designed for novice and experienced brewers and brewing industry professionals.

Not only do our graduates gain unparalleled expertise in brewing science, technology and engineering, they also go on to become leaders in the brewing industry. Discover for yourself the most comprehensive brewing education programs—and join our tradition of excellence.

The UC Davis Continuing and Professional Education Connection

UC Davis Continuing and Professional Education has been an internationally recognized leader in educational outreach for individuals, organizations and communities for nearly 60 years. Through UC Davis Continuing and Professional Education, the general public has access to university-level training without requiring admission to a degree program.

In response to the demand for condensed technical training programs in brewing science, UC Davis Continuing and Professional Education created several professional brewing programs in the late sixties. The purpose of these programs was to teach a variety of skills that are required in the brewing industry.





Master Brewers Certificate Program



February-May

The *Master Brewers Certificate Program* is a unique, 15-week program that provides an in-depth understanding of brewing science and brewery engineering and prepares students to enter the brewing industry with the potential to rise to the highest levels of leadership within it. Major topics covered in brewing science include malting, mashing, brewing, fermentation and finishing, while the brewery engineering subject matter focuses on fluid flow, heat and mass transfer, solid-liquid separation and more. Students explore these two fields through professional-level equivalents of UC Davis degree-program courses and expand their brewing knowledge through assigned reading and writing exercises and visits to breweries in Northern California.

Objective

The primary objective of the *Master Brewers Certificate Program* is to enable students to become knowledgeable, thoughtful, accomplished and professional practical brewers who are eagerly sought by employers in today's brewing industry.

Upon completion of the program, you will be prepared to:

- Evaluate and select raw materials for specific brewing objectives and product qualities. Efficiently and safely operate the brewhouse for wort production. Manage yeast and fermentation to meet product objectives, and finish and package the product to contemporary standards of excellence. Conduct a quality assurance program suited to the brewery and product mix.
- Design a brewery unit, or offer educated input to a brewery design team. Wisely select, or help to select, equipment from among several choices. Oversee installation of it to contemporary standards. Make logical and useful evaluations of processes used in a brewery and select appropriate options.
- Undertake a wide variety of problem solving tasks related to product quality, process efficiency or plant design.

Lecture Topics

Classroom lectures are designed to provide you with an understanding of:

- Grain handling, malting, malt analysis and their effects in brewing
- Brewhouse processes and the control of wort quality
- Yeast and fermentation processes and their effects on beer quality
- Finishing beer, sterilization of beer and packaging technology
- Flow of fluids in pipes and through pumps in a brewery setting
- Heat transfer and the effects of insulation and fouling on efficiency
- Theory and practice of carbonation, including mixed gas technology
- Theory and practice of refrigeration in the brewery

For more information about the course content see page 6.

*"If you want to learn
about brewing, this is one of
the most in-depth ways to do it.
It takes you from the field to
the bottle to the store...every
single aspect of brewing.
You don't miss a thing!"*

*– Crystal Fraley, consultant,
White Labs*





Who Should Attend

This program is designed for persons who desire a formal professional qualification in brewing science and engineering, either to enter the brewing industry or to advance within it, or for those in formal training programs at breweries.

Prerequisites

While a degree is not required for acceptance to this program, college-level work in the subject areas listed below is required for success in the program. You must be able to provide transcripts documenting the math requirement and at least two other subject areas:

- Mathematics: pre-calculus
- Biological sciences: microbiology, cell physiology or biochemistry
- Chemistry: organic, inorganic or analytical
- Physics: heat and mechanics or process control
- Engineering: topics in mechanical or chemical engineering

Practical brewing experience is a plus, but is not required.

For detailed information about the academic prerequisites see page 8.

Those who cannot document successful completion of the minimum academic prerequisites will not be admitted to the program. Such students should prepare at least one year before entering the *Master Brewers Certificate Program* by taking appropriate courses at a local college.

Fees

\$15,000

The fee includes all texts and course materials. A nonrefundable deposit of \$1,000 and a nonrefundable \$125 certificate fee are due at the time of acceptance to the program. The balance is due prior to the first day of the program. The fee does not include room and board.

This program has been approved for VA educational benefits.

All fees are subject to change.

Withdrawal/Refund

If a request for withdrawal is received within the first five days of the course and all course materials are returned, a refund will be granted for tuition fees paid beyond the nonrefundable \$1,125 deposit. No refunds will be granted after the fifth class day.

Application Details

Applications are reviewed and accepted on a first-come, first-served basis. Class size is limited. Early application submission is encouraged.

Complete application packages must include a completed application form, transcripts supporting the academic prerequisites, a résumé listing any practical experience in brewing or related fields and the application fee of \$45.



"I could not be happier and more proud of what I get to do for 40+ hours a week: brew beer. I have the Master Brewers Program to thank for that. I cannot put into words how much the program has benefited me."

~ Jason Eich, production brewer, The Dudes' Brewing Company, Torrance, Calif.





Curriculum



"The instruction provided at UC Davis Continuing and Professional Education has been indispensable to my success, not only in brewing science and process improvement, but to managing union staff."

*~ Steven Reid,
brewing supervisor,
F.X. Matt Brewing Company*



At the end of the *Master Brewers Certificate Program*, you will have a solid understanding of the topics listed below at the level of a master brewer. This level of understanding should be adequate for solving all practical problems and day-to-day issues that arise, and for providing outstanding technological leadership in a brewery context. Upon completion of the program, you will be prepared intellectually to take on significant responsibility for a brewery and provide the technological guidance required for successful operation.

Brewing Science and Technology

Brewing Science: Barley to Beer

Gain a thorough understanding of the science and technology of ale and lager brewing and become familiar with the specialized language and concepts of the brewing industry. This is accomplished by a sequential study of brewing raw materials, brewing processes and quality control methods of the industry and their influence on beer character. This recurring theme illustrates the scientific and practical confines within which successful brewing is performed. Upon completion of the program, you will have a good understanding of what constitutes beer quality and how this is achieved by contemporary methods of manufacture.

Topics include

- The history of brewing. Brewing and beer around the world. Overview of the process from barley to malt. A review of basic science relevant to brewing.
- Brewhouse calculations and technology. Biochemistry of brewhouse processes, starch, amylases and the control of wort properties. Water quality and adjustment.
- Technology of malting from selection of barley to preparation of specialty malts. Biochemistry of malting and malt quality and analysis. Malt handling, mills and milling.

- Malt, malting processes and malt components in wort and beer and their role in beer quality with special focus on haze, foam and microbiological stability. The non-volatile components of beer and their origin in the biochemistry of malt, their modification by process decisions and their role in beer quality.
- Technology of production of hops and hop products. Hop chemistry. Kettle boil.
- The chemistry of hops and their measurement and the role of hop compounds in beer quality, including flavor, foam and stability. Brewing water and brewing calculations (e.g., for beer formulation and for adjustment of brewing water).
- Yeast propagation and handling. Fermenters and technology of fermentation.
- Biology of yeasts. Biochemistry of fermentation and fermentation kinetics. Production of beer flavor compounds. Beer maturation.
- Yeast and fermentation: the yeast cell, fermentation and fermenter design, yeast physiology, normal and abnormal beer flavors and their relation to wort composition, beer quality and the brewing processes that produce them. Evaluation of yeast quality and amount and its relation to consistent fermentations.
- Microbiology and sanitation. Packaging and dispense. Brewery effluents.
- Use of a microscope and haemocytometer for yeast count. Microbiological plating techniques on beers and worts. Standard analytical methods for alcohol, real extract, pH, color. Packaged beer headspace air, CO₂ content, foam and haze stability. Tests on barley, malt and milled samples. Limited practical brewing on the UC pilot plant.
- Wort production: the chemistry of carbohydrates. The spectrum of these compounds present in worts and beers and their origin and role in product quality. Extract yield and the variables that influence it (e.g., milling, mash thickness, mash temperature and solid-liquid separation). Wort stabilization and composition relative to yeast nutrition.



- **Maturation and finishing:** the challenge of beer finishing for sale, especially maturation, clarification, carbonation, stabilization and their relation to raw materials and brewing processes. Influence of raw materials selection and brewing processes on beer quality, especially stability and finishing processes.
- **Finishing and filtration.** Carbonation and stabilization of beers, beer analysis and quality control methods.
- **Sensory analysis of beers.**

Brewing Exercises

You will have the opportunity to view some of the principles covered in the first session by observing brewing at Sudwerk Brewing Co., visiting local breweries and participating in beer tastings. However, there will be insufficient time for significant hands-on teaching and learning outside of classroom lectures.

Brewery Engineering

Physical Principles in Brewing

Learn the physical and engineering principles that have important applications in the brewing industry, including: fluid-flow (through pumps, pipes and valves); properties of steam, energy balances, heat transfer and refrigeration (in boilers, calandria, heat exchangers and refrigeration plant); and the gas laws (carbonation and dispense). Although the program is concerned with concepts, computation is a major theme applied to the solution of realistic problems, including brewing equipment design. The objective is to ensure that you can hold an intelligent discussion with engineers and can evaluate engineering proposals.

Topics include

- Physical principles of engineering.
- The properties of steam, including phase diagrams and steam tables. Conservation of energy. Energy balance.
- Fluid flow, measurement, streamline/ turbulent flow, valves, pipes and pumps.
- Pressure, volume and temperature relationships. Carbonation.
- Modes of heat transfer: conduction, convection and radiation.
- Refrigeration.
- Packaging.
- Psychometrics. Gas-vapor mixtures, humidity and drying.
- Heat transfer.
- Solid-liquid separation and filtration performance.
- Pumps, pipes and fluid flow. Friction factors. Rheology.

Engineering Exercises

Compute solutions to typical problems that arise in breweries and examine equipment and demonstration devices designed to illustrate the principles discussed in the lecture material.



"The Master Brewers Program was one of the best investments I've ever made, and the education has really paid off in my career."

*~ Nick Smith, founder/brewer,
Soul Barrel Brewing,
Cape Town, South Africa*





Prerequisites

Success in this program requires a background in biology, microbiology, biochemistry, chemistry, physics, mathematics and engineering topics. Though a college degree related to one of these areas is preferred, it is not necessary for admission to the *Master Brewers Certificate Program*. Nevertheless, because instruction is in strictly scientific terms, some relevant college-level work is required in these areas to assure that students get the most out of their Davis experience. However, the breadth of topics covered in the program is wide, and few candidates will be adequately prepared in all areas.

All minimum prerequisites must be completed in advance of applying. Incomplete applications will not be considered for admission.

You must take course(s) from an accredited institution and you must receive a passing grade in order for the course(s) to count towards the prerequisite coursework.



You should have **(a) adequate preparation in mathematics (pre-calculus) and (b) relevant preparation in at least two other areas listed below.**

Mathematics — (i.e., pre-calculus); The brewery engineering program does not require calculus for success, but algebra skills are necessary for calculating (e.g., fluid flow and heat exchange). These skills are usually described as “pre-calculus,” meaning the most advanced mathematics course before a calculus course. The engineering program provides ample opportunity for computation, and you should not be intimidated by this.

Biological Sciences — (i.e., biochemistry, microbiology or cell biology); Such courses, along with chemistry, are the foundation of our brewing science studies (e.g., malting, mashing and fermentation), which is about two-thirds of the total effort. You should choose courses that are general in approach and include cell structure and function, cell components (e.g., proteins enzymes and carbohydrates) and the biochemical pathways that drive the life of cells. Students with a good biology background should focus on physics/math preparation.

Chemistry — (i.e., a second semester of a general chemistry course or beyond); Inorganic chemistry covering the nature of matter (e.g., atoms, chemical bonds, gases, liquids and solids, solutions, colloids and change of state) is useful. A similar introductory course in organic chemistry is also desirable because most all of the molecules relevant to brewing are organic. Ideally, you should understand nomenclature, structure, bonding/bonds and isomerism of organic molecules, and the properties of functional groups on alcohols, esters, organic acids, aldehydes and ketones as these compounds are important in intermediary metabolism and in beer flavor.

Physics — Physics is a very useful foundation for our engineering courses, and candidates without engineering course experience should complete some physics coursework. Physics courses on heat (temperature and thermal properties of matter and heat transfer) and mechanics (mechanical properties of matter, motion, work/energy, momentum, gas laws) are useful. Courses on electricity, magnetism and light are not applicable. Process control courses are not a substitute for physics courses, but have their own value for parts of the curriculum.

Engineering — Candidates with engineering courses (whether or not a degree was granted) are likely to have adequate physics and math skills and probably a sufficient grasp of chemistry for our program. However, such candidates are often under prepared in biology and should concentrate on biology courses.

Practical brewing experience is valued because it provides a useful context for learning, but is not required for admission into the program and will not substitute for adequate preparation in science.

For questions regarding prerequisites, please call (530) 757-8899.

“I owe where I am to this program. It helped get me on a career path, not just a job, a lifelong brewing career.”

*~ Kevin Wright,
founder and brewmaster,
Third Space Brewing,
Milwaukee, Wis.*



Frequently Asked Questions

Do I need to be 21 to apply?

Students do not need to be 21 years of age to apply; however, students **must be 21** years of age when they begin the *Master Brewers Certificate Program*.

How does the waitlist work?

Applicants who are placed on the waitlist, but are not called to participate in the program during the year for which they applied will automatically roll over to the following year, with the top 35 being guaranteed a position and all others going back on a waitlist. The application will continue to roll until the applicant is offered a formal position in the program.

Do my transcripts need to be official?

No. Unofficial transcripts and/or photocopies of official transcripts will suffice.

How do I transfer credits from another institution?

You will not officially transfer credits to UC Davis Continuing and Professional Education. Instead, you will submit a transcript demonstrating successful completion of the academic prerequisites with your application.

Is financial aid available for the Master Brewers Certificate Program?

At this time UC Davis Continuing and Professional Education students are not eligible for financial aid based on the FAFSA (Free Application for Federal Student Aid), sometimes referred to as Title IV funds, which have requirements UC Davis Continuing and Professional Education programs do not meet. However, students in courses and programs offered through UC Davis Continuing and Professional Education may be eligible for a tax credit for educational expenses, job training funds, alternative student loans (which do not require enrollment in a degree program) or other financial assistance. For more information visit Financing Your Education on the UC Davis Continuing and Professional Education website.

What forms of payment are accepted?

UC Davis Continuing and Professional Education accepts Visa, MasterCard, Discover, American Express, Wire Transfer, checks drawn on a U.S. bank and U.S. money orders. UC Davis Continuing and Professional Education is not responsible for any transaction fees. If submitting payment by wire transfer, contact the Student Services department for banking information at cpeinfo@ucdavis.edu or (530) 757-8777 or (800) 752-0881. Please allocate sufficient time to process wire transfer payments.

Does UC Davis Continuing and Professional Education accept VA benefits?

Yes. Veterans of the U.S. military who have available educational benefits can enroll in UC Davis Continuing and Professional Education certificate programs and obtain reimbursement from the Veterans Administration. UC Davis Continuing and Professional Education has approval under the Veterans Educational Benefits program to allow veterans, their dependents and others who qualify for Veterans Educational Benefits to further their education via one of our certificate programs.

Contact UC Davis Continuing and Professional Education to find out if the program that interests you has been approved for G.I. Bill educational benefits, ask questions about the process, or, when you are ready to enroll, contact our veteran services coordinator at (800) 752-0881 or email cpe-va@ucdavis.edu.

Is on-campus housing available for students in the Master Brewers Certificate Program?

No. On-campus housing is not available to students in the program. Most students rent apartments or homes in Davis or surrounding areas (Woodland, Sacramento, Dixon). For more information about the Davis community and/or rental properties, please visit: <https://daviswiki.org/>.

Do you offer job placement services for graduates of the Master Brewers Certificate Program?

While we do not offer formal job placement services to the graduates of our program, we do actively aid students in finding jobs in the brewing industry. For example, each year we publish a booklet that contains the résumés of each student enrolled in the *Master Brewers Certificate Program*. We then provide digital access to The Résumé Booklet, as it's called, to approximately 7,000 microbreweries in the United States.

In addition, a weekly "Job Postings" email is distributed to alumni of the program, which lists various job opportunities available in the brewing industry. There are ample opportunities to network with industry representatives during the *Master Brewers Certificate Program* as well.

Is the Master Brewers Program a master's degree program?

No. The *Master Brewers Certificate Program* is not a UC Davis master's degree program. It is a 15-week certificate program. Students who successfully complete the program will be awarded the Master Brewers Certificate.

Additional questions? Please contact Melissa Marbach, program manager, at (530) 757-8899 or mmarbach@ucdavis.edu.

"The Master Brewers Program was an incredible academic experience because of the world-class professors who are at the peak of their profession."

– Sam Hartwell

Learn from the Best in the Business



Charles Bamforth

CHARLES W. BAMFORTH, Ph.D., D.Sc. (Hull), D.Sc. (Heriot-Watt), is distinguished professor emeritus at the University of California, Davis, and senior quality advisor to Sierra Nevada Brewing Company. He has more than 40 years of academic and professional brewing expertise, including senior roles with Brewing Research International and Bass Brewers. He is also honorary professor at the University of Nottingham. A fellow of several organizations, including the Institute of Brewing and Distilling (IBD), Bamforth was for 18 years editor in chief of the *Journal of the American Society of Brewing Chemists* (ASBC) and has published extensively on beer and brewing. He is a recipient of the ASBC's Award of Distinction, and is past president of the IBD. He has also received the Recognition Award from the Brewers Association, the Award of Honor from the Master Brewers Association of the Americas and the Horace Brown Medal from the IBD.



James Brown

JAMES A. BROWN, Ph.D., is the UC Davis Continuing and Professional Education director of fermentation science at the University of California, Davis. With degrees in fermentation science and microbiology, his graduate research at UC Davis focused on the functional genomics of yeast and fermentation stress. He expanded on yeast responses to environmental stress as a research scientist at Stanford University School of Medicine for eight years before returning to UC Davis. He has taught microbiology of wine and beer since 1994.



Michael Long

MICHAEL LONG is a graduate student pursuing his Ph.D. in biological systems engineering at the University of California, Davis. His research interests revolve around energy systems and waste utilization, and he has a background in mechanical engineering. He began homebrewing at the age of 18 and holds the position that much of his real-world understanding of scientific concepts stems from his experiences in brewing and automotive repair. His passion for sharing the wonders of science and engineering led him to teaching in the *Master Brewers Certificate Program* and assisting in the development of a new introductory engineering course at UC Davis.



Patrick Greer

PATRICK GREER, M.B.A., a senior supply chain professional with more than 30 years of experience in the beer industry, manages all aspects of supply operations, including procurement, production, inventory management, capacity planning and distribution. He also works with First Key as part of a distinguished team of senior beer industry professionals, helping breweries of all sizes reduce costs, improve operations and expand distribution. Greer has worked for Anheuser-Busch (A-B InBev) and was a founding steering committee member of the John Cook School of Business, St. Louis University, Center for Supply Chain Management Studies, where he was an adjunct professor. He is a certified Supply Chain Pro™ and speaks at industry conferences and webinars.



Rebecca Bleibaum

REBECCA N. BLEIBAUM, M.A., is president/chief of sensory intelligence at Dragonfly SCI, Inc., a sensory and consumer insights research company, specializing in product testing and professional education. She has more than 25 years of experience in applied research from Tragon Corporation as their chief sensory officer and is co-developer and instructor of UC Davis Continuing and Professional Education's *Applied Sensory Consumer Science Certificate Program*. Bleibaum is co-author of *Sensory Evaluation Practices*, previous chair of ASTM International — where she has received awards for her contributions, including the Award of Merit— and has spoken at numerous professional events. She is a recipient of the UC Davis Continuing and Professional Education Outstanding Service Award.



Thomas Stull

THOMAS STULL is the head brewer of Sudwerk Brewing Co. in Davis, Calif. He holds a B.S. in economics from George Mason University and is a graduate of UC Davis Continuing and Professional Education's *Master Brewers Program*. He has been with Sudwerk Brewing Co. since 2009.

From the Classroom to the Brewing Industry...

Eric Augustin

Abita Brewing Co.

Eric Bachli

Trillium Brewing Co.

Aaron Barth

Big Storm Brewery

Stephen Borutta

MillerCoors

Damian Brown

The Bronx Brewery

Robert Brown

7 Bridges Brewing

Luke Burcham

Saint Arnold Brewing Co.

Justin Burnsed

Mockery Brewing Co.

Corey Campbell

Big Sky Brewery

Andrew Carle

Lagunitas Brewing Co.

Nathan Crane

Friends and Allies Brewing Co.

Russell Croel

Solid Ground Brewing

Brent Crowell

Foothills Brewing

Rob Croxall

El Segundo Brewing Co.

Timothy Daglow

Big Wood Brewery

Mark Denari

New World Ales

Laura Gomes de Aguiar

Anheuser-Busch, InBev - Brazil

Preston Doris

21st Amendment Brewery

Thijs Derksen

Heineken

Daryl Eisenbarth

The Monocacy Brewing Co.

Ronnie Fink

Modern Brewery

Kevin Foster

Anheuser-Busch, InBev

Andrew Gibbons

Lost 40 Brewing Co

Aaron Gibbs

Elliott Bay Brewery Co.

Jeffrey Graves

Anheuser-Busch, InBev

Kelly Harper

Deschutes Brewery

Joe Hamborg

Toppling Goliath Brewing Co.

Jacob Harper

Deschutes Brewery

Patrick Hayes

Firestone Walker Brewing Co.

Chris Helderman

Land Grant Brewing Co.

Kelsey Holstein

21st Amendment Brewery

Jeff Hueneman

Mother Earth Brew Co.

Rod Hughes

Steamworks Brewing Co.

Brandon Jacobs

Stone Brewing Co.

Bruce Johnson

Springfield Brewing Co.

JC Jordan

Braxton Brewery

Chris Keeton

Alaro Craft Brewery

Matthew Kendall

Banks DIH Ltd.

Brian Kiss von Soly

Stone & Wood Brewing Co.

Abbot Koehler

Widmer Brothers Brewing

Amanda Koeller

Big Dog's Brewing Co.

Micah Krichinsky

Dogfish Head Craft Brewery

Mike Lieser

Frost Beer Works

Steve Luke

Cloudburst Brewing

Bryan C. McCarthy

Upland Brewing Co.

Patrick Meehan

Swiftwater Brewing Co.

Jasper Miller

Higherground Brewing Co.

Benjamin Mills

Fossil Cove Brewery

Drew Morden

Tioga-Sequoia Brewing Co.

Kristina Pengelly

Sudwerk Brewing Co

Kate Peters

Mill Street Brewery

Amanda Petro

Dogfish Head Craft Brewery

Adam Osborn

RaR Brewing

Dhaneshwar Ramnauth

Banks DIH Ltd.

Robert Rand

Sierra Nevada Brewing Co.

Tyson Read

Iron Horse Brewery

Mackenzie Remington

Creemore Springs Brewery

Dana Robles

Boneyard Beer

James Scott

Deschutes Brewery

Ben Smith

Surly Brewing Co.

Bruce Stamski

Still River Brewery

Nathan Stephens

Ballast Point Brewing
and Spirits

Brandt P. Stewart

Third Space Brewing

Tom Stull

Sudwerk Brewing Co.

Sevag Taslakian

Beirut Beer

Peter Trapani

Sierra Nevada Brewing Co.

Cortlandt Toczykowski

Barebottle Brew Co.

Kenjiro Tomita

Crooked Thumb Brewery

Gerardo Gómez Vargas

Cervecería Libertad Gto MX.

Juan Alejandro Vasquez

Boyaca Brewery

Dan Watson

Cleophus Quealy Beer Co.

Dan Weber

Dogfish Head Craft Brewery

Clark Wiant

Golden Road Brewing

Alan Windhausen

Pikes Peak Brewing Co.

Brandon Winneker

Lost Winds Brewing

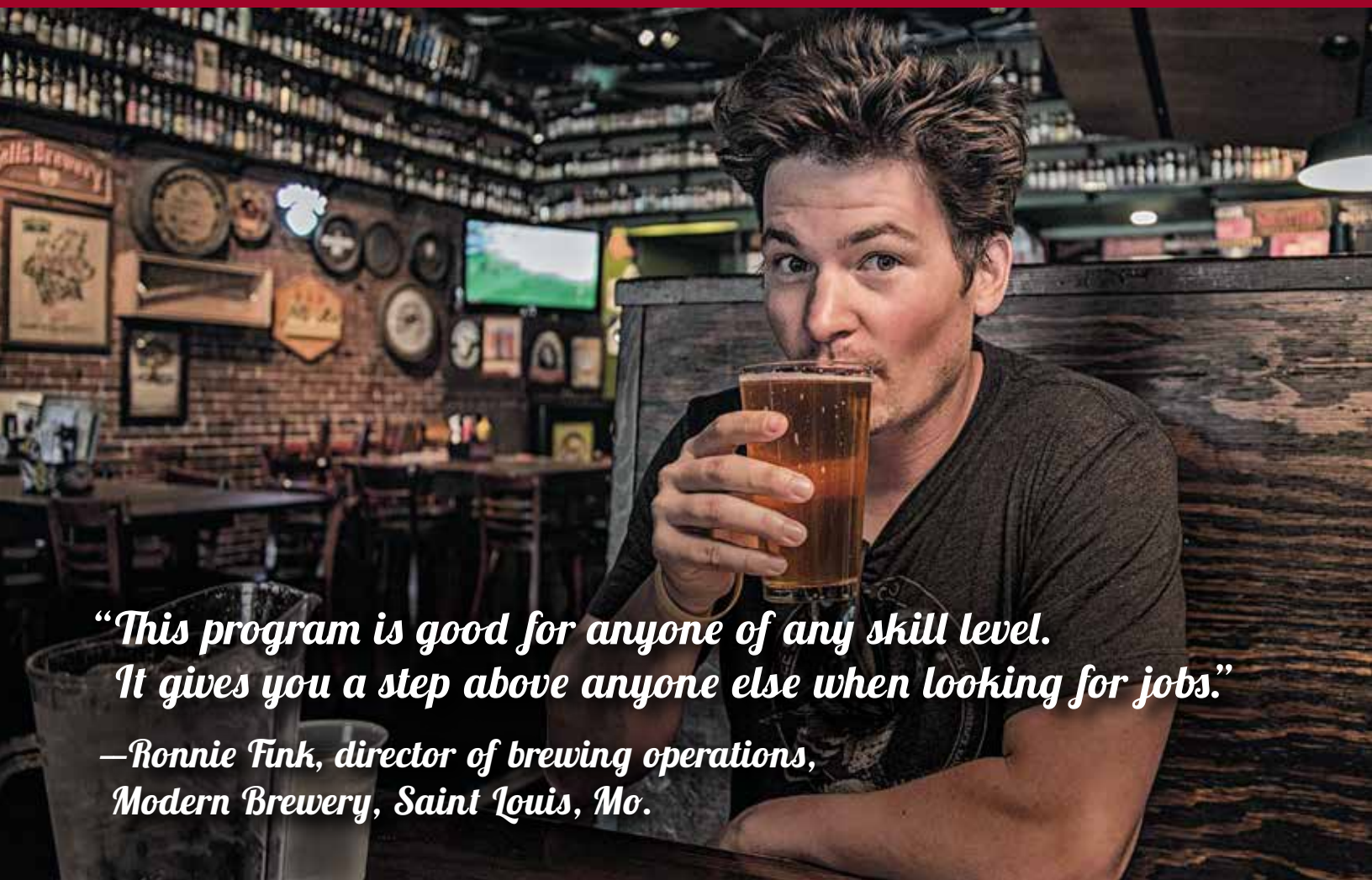
Kevin Wright

Third Space Brewing

Drew Yeager

Fat Bottom Brewing

Check out success stories from some of our graduates at
cpe.ucdavis.edu/brewing



*“This program is good for anyone of any skill level.
It gives you a step above anyone else when looking for jobs.”*

*—Ronnie Fink, director of brewing operations,
Modern Brewery, Saint Louis, Mo.*

Check out Ronnie’s story and see more of our student reviews!

Visit cpe.ucdavis.edu/brewing