### **NMSBrew Program Goals**

- Train new generations of responsible and appreciative beer drinkers
- Lower barriers to participation in homebrewing and craft-beer culture
- Prepare engineers for work in the brewing, beverage, food and biotechnology industries
- Design and deliver educational and research resources for brewing industry and community stakeholders
- Collaborate with food science and hospitality programs to brainstorm new business innovations

## NMSBrew Engagement Activity Examples

• American Institute of Chemical Engineers Young Professionals Home Brew Competition



• Mini-growler fundraiser with local breweries



- Pink Boots Society Collaboration Brew Day plus education and networking events
- Characterization of native New Mexico hops
- Undergraduate research in gluten-free brewing and mixed fermentations
- New Mexico Brewers Guild associate member
- KRWG "Brewing Confidential" radio shows
- Beer sensory analysis events and lab tours
- Homebrewing demonstrations

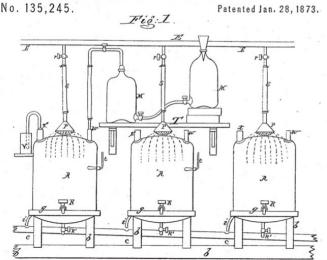
# NMSBrew Faculty and Collaborators

**Catherine "Catie" Brewer, Ph.D.** Chemical Engineering, NMSBrew Director, Associate Professor, Chemical and Materials Engineering

**Stephen Taylor, Ph.D.** Chemistry, NMSBrew Instructor, Visiting Professor of Practice, Chemical and Materials Engineering

**Sergio Martinez-Monteagudo, Ph.D.** Bioresource and Food Engineering, Assistant Professor, Chemical and Materials Engineering and Family and Consumer Sciences

Kevin Lombard, Ph.D. Agronomy, Associate Professor, Plant and Environmental Sciences, Agriculture Science Center in Farmington



**NMSBre** 

### Brewery Engineering @NMSU





BE BOLD. Shape the Future. College of Engineering Chemical and Materials Engineering

### **NMSBrew**

Chemical and Materials Engineering New Mexico State University chme@nmsu.edu (575) 646-1213



### bit.ly/NMSBrew

Donations to support NMSBrew can be made by searching for "Brew Lab" within the donations link on the NMSBrew page.

## Brewery Engineering Minor

The brewery engineering minor, when combined with the B.S. in chemical engineering curriculum, was designed to align with the Master Brewer's Association of the Americas (MBAA) guidelines for 4-year degrees in brewing science. **This minor is open to all; CHME major is not required.** The minor consists of 15 credits of required courses and 3 credits of electives.

**CHME 395V Brewing Science & Technology**\* (3) History of brewing, beer styles with tasting assignments, homebrewing course project.

**CHME 495 Brewing Science & Engineering**\* (3) Brewing ingredients, processes, fermentation science, finished beer, quality control, brewery tours, alcohol safety, brewpub business plan capstone project. Taught with FSTE 430.

**CHME 495L Brewing Laboratory** (1) Homebrewing, scale up to one-barrel brew system in Seidel Brew Lab, clean-in-place, beer packaging, beer analysis, lab safety.

**BIOL 311 General Microbiology** (3)

BIOL 311L General Microbiology Lab (2)

BCHE 395 Biochemistry (3)

**Electives:** Food Science I, Intro to Food Engineering, Sensory Evaluation of Foods, Brewing and Distilling Study Abroad\*, Brew Industry Employment, Undergraduate Research

#### \*must be at least 21 years old



### **Brewing and Distilling Abroad**

#### Faculty-Led International Program (FLiP)

Two-week courses taught in late May/early June that allow students to experience traditional and emerging beers and distilled beverages in their native habitats.

To be taught as CHME 395V: Brewing science and society.

Course is open to NMSU degree and non-degree students.

**2018 and 2023 (planned**): Brewing and Distilling in Ireland and England: English and Irish ales, whiskey, gin, Campaign for Real Ale (CAMRA), brewpubs in society.



**2022** (**postponed from 2020**): Brewing and Distilling in the Netherlands and Belgium: "weird" ales, Trappist breweries, jenever, lambic brewing, gueze blending.

**2024 (planned)**: Brewing and Distilling in Germany and Austria: lagers, wheat beers, schnapps.





## Frank and Jennifer Seidel Brew Laboratory



Homebrew equipment for traditional 5.5-gal batches 1-BBL Stout brewhouse with hot liquor tank, mash tun, brew kettle, wort grant

Two Stout 1-BBL conical fermenters; Thermaline T4-21 wort chiller

1-BBL SS BrewTech brite tank; 125' 3/8 HP glycol chiller

Kegorator with 4 taps; 1/8 and  $\frac{1}{2}$  HP centrifugal pumps

Anton Paar PBA-B packaged beer analyzer

Water quality, microbiology, hop, and VDK analytical capabilities





