# NODERNIST CUISINE



Nathan Myhrvold with Chris Young and Maxime Bilet



A revolution is underway in the art of cooking

A revolution is underway in the art of cooking. Just as French Impressionists upended centuries of tradition, Modernist cuisine has in recent years blown through the boundaries of the culinary arts. Borrowing techniques from the laboratory, pioneering chefs at world-renowned restaurants such as elBulli, The Fat Duck, Alinea, and wd~50 have incorporated a deeper understanding of science and advances in cooking technology into their culinary art.

In *Modernist Cuisine*: The Art and Science of Cooking, Nathan Myhrvold, Chris Young, and Maxime Bilet—scientists, inventors, and accomplished cooks in their own right—have created a six-volume, 2,438-page set that reveals science-inspired techniques for preparing food that ranges from the otherworldly to the sublime. The authors and their 20-person team at The Cooking Lab have achieved astounding new flavors and textures by using tools such as water baths, homogenizers, and centrifuges, and ingredients such as hydrocolloids, emulsifiers, and enzymes. *Modernist Cuisine* is a work destined to reinvent cooking.







"This book will change the way we understand the kitchen."

—FERRAN ADRIA

"The most important book in the culinary arts since Escoffier."

—TIM ZAGAT

"Amazing!
Unparalleled in its
breadth and depth."
—Wylie Dufresne

"Modernist Cuisine is a landmark contribution to the craft of cooking and our understanding of its underlying principles. Its scale, detail, and eye-opening graphics are unmatched by any other book on the subject. It will be an invaluable resource for anyone with a serious interest in cooking techniques, whether the professional innovations of the last few decades or the long traditions on which they build."

—HAROLD McGEE

"A breathtaking new benchmark in understanding cooking, *Modernist Cuisine* is destined to be as important a work for the 21st century as Escoffier's *Ma Cuisine* was for the 20th century."

—DAVID KINCH

Tender hamburger bun, made from scratch and toasted in beef suet

Hamburger glaze of suet, pureed tomato confit, beef stock, and smoked salt

Romaine lettuce infused sous vide with liquid hickory smoke

Vacuum-compressed heirloom tomato

Cheese slice made from aged Emmental, Comté, and wheat ale

Short-rib patty ground to vertically align the grain

Crimini mushroom ketchup with honey, horseradish, fish sauce, ginger, and allspice







How do you make an omelet light and tender on the outside, but rich and creamy inside? Or French fries with a fluffy interior and a delicate, crisp crust that doesn't go soggy? Imagine being able to encase a mussel in a gelled sphere of its own sweet and briny juice. Or to create a silky-smooth pistachio butter made from nothing more than the nuts themselves. Modernist Cuisine explains how these techniques work and guides you through them by using step-by-step, illustrated instructions. Through thousands of original photographs and diagrams, the science and technology of the culinary arts come alive. Stunning new photographic techniques take the reader inside the food: you'll see cooking in action all the way from microscopic meat fibers to an entire Weber grill in cross-section. Spend some time with this book, and you will view cooking and eating in a whole new light.

A sampling of what you'll discover:

- why plunging food in ice water doesn't stop the cooking process;
- when boiling cooks faster than steaming;
- why raising the grill doesn't lower the heat;
- how low-cost pots and pans can perform better than expensive ones;
- why baking is mostly a drying process;
- why deep-fried food browns better and tastes best when the oil is older;
- how modern cooking techniques can achieve ideal results without the perfect timing or good luck that traditional methods demand.

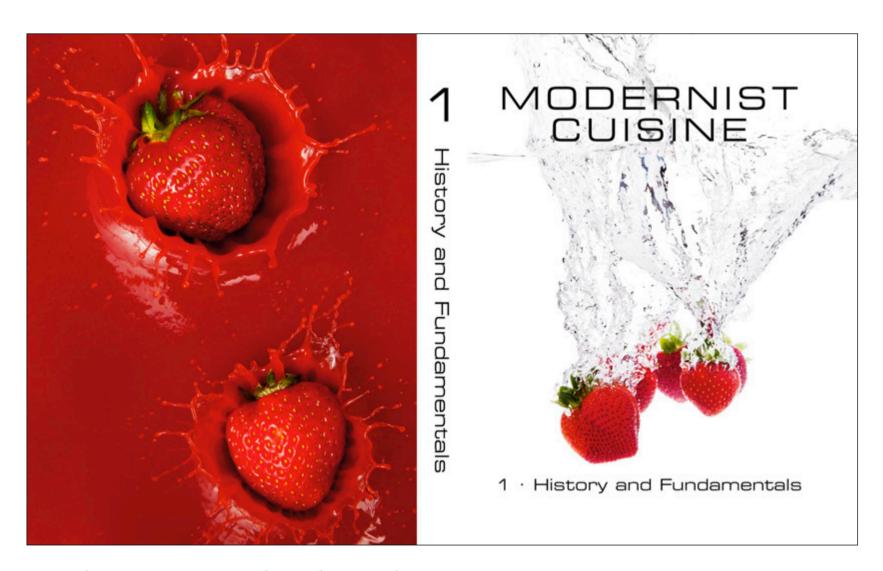
Invaluable features include:

- insights into the surprising science behind traditional food preparation methods such as grilling, smoking, and stir-frying;
- the most comprehensive guide yet published on cooking sous vide, including the best options for water baths, packaging materials, and sealing equipment; cooking strategies; and troubleshooting tips;
- hundreds of parametric recipes and step-bystep techniques for cooking meat and seafood (more than 250 pages) and fruits, vegetables, and grains (130 pages);
- extensive chapters explaining how to achieve amazing results by using modern thickeners, gels, emulsions, and foams, including example recipes and formulas;
- more than 300 pages of new recipes for plated dishes suitable for service at top-tier restaurants, plus recipes adapted from master chefs including Grant Achatz, Ferran Adrià, Heston Blumenthal, David Chang, Wylie Dufresne, David Kinch, and many others.

Modernist Cuisine is an indispensable guide for anyone, from the professional chef to the talented home cook, who is passionate about the art and science of cooking.

## "This is the book we wanted someone to make."

#### —Greg Atkinson, FoodArts



Volume 1: History and Fundamentals (348 pages)

History

Microbiology for Cooks

**Food Safety** 

Food and Health

Heat and Energy

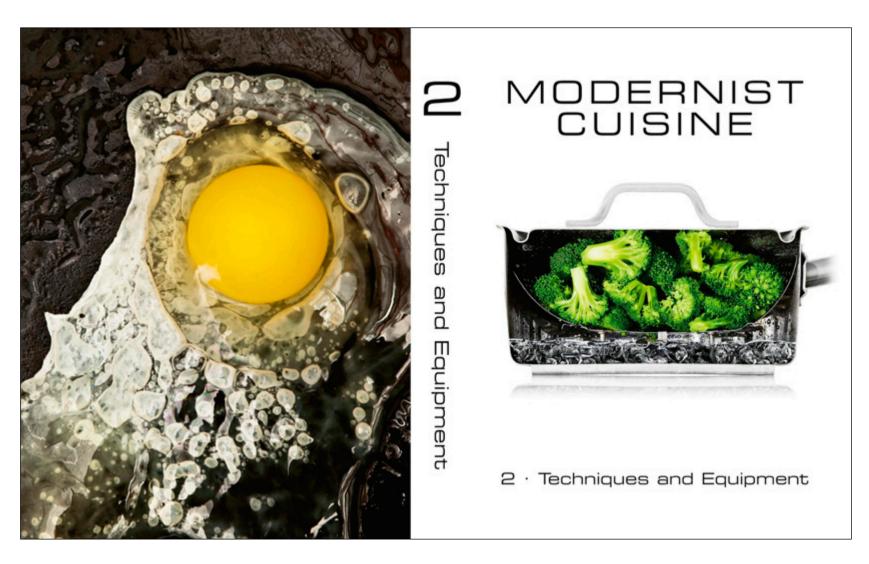
The Physics of Food and Water

"Escoffier would crap his pants."
—Scott Heimendinger,

SEATTLEFOODGEEK.COM

"If Leonardo da Vinci were alive today, he would write a cookbook, the Codex of Cooking. This cookbook exists at last. It is *Modernist Cuisine: The Art and Science of Cooking.*"

—EDOUARD COINTREAU, GOURMAND COOKBOOK AWARDS



Volume 2: Techniques and Equipment (480 pages)

**Traditional Cooking** 

Cooking in Modern Ovens

Cooking Sous Vide

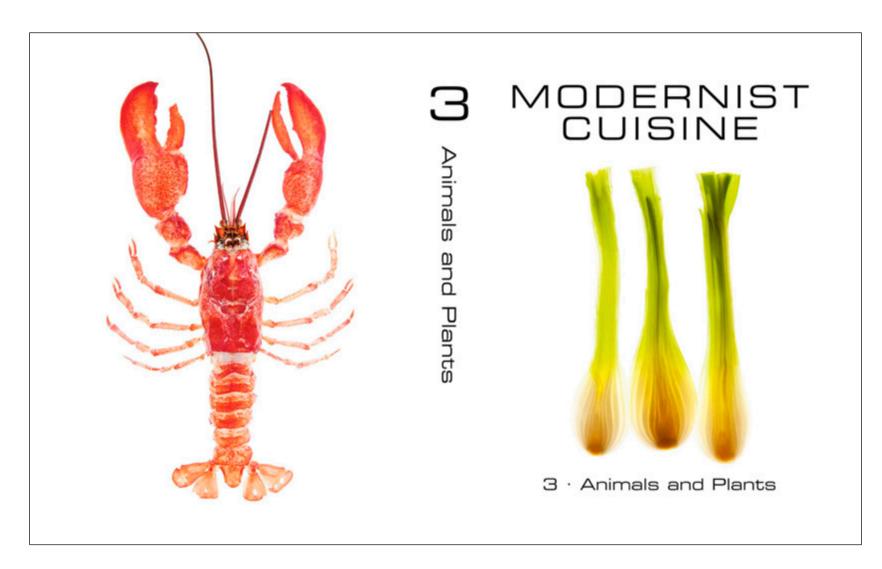
The Modernist Kitchen

"I will marry anyone who purchases a copy of *Modernist Cuisine* for me."

-@STYROFOAMCUP

## "I want it, I need it, GOT TO HAVE IT!"

### —@BOSSROSST ON TWITTER



Volume 3: Animals and Plants (408 pages)

Meat and Seafood

**Plant Foods** 

"I'm saving my Christmas present for next March when all six volumes of the very beautiful *Modernist Cuisine* are published. Chris and Maxime both worked for me. They're looking at the history and the science behind the new techniques in cooking in a really exciting way."

#### —HESTON BLUMENTHAL



Volume 4: Ingredients and Preparations (416 pages)

**Thickeners** 

Gels

**Emulsions** 

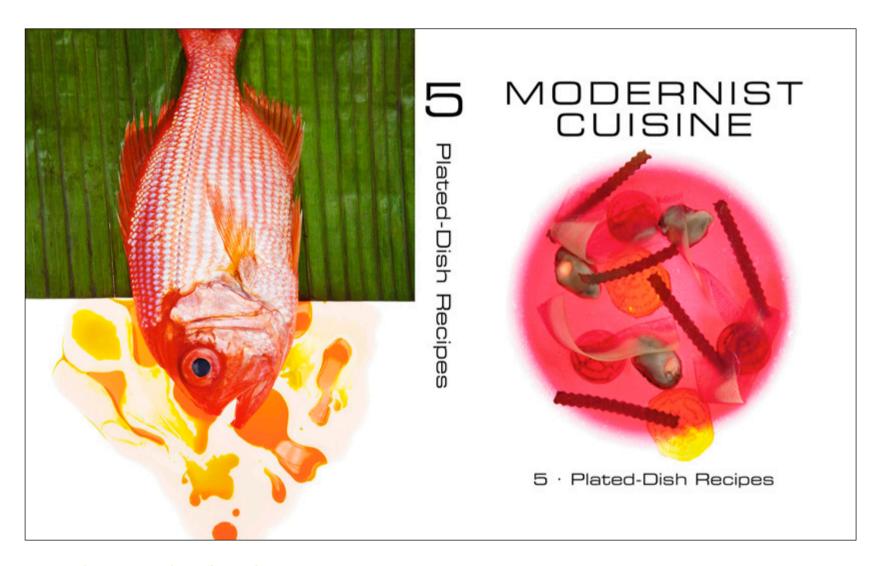
**Foams** 

Wine

Coffee

### "This is mind-boggling!"

#### —Julia on Modernist Cuisine.com



Volume 5: Plated-Dish Recipes (412 pages)

Tender Cuts Starches

Tough Cuts Fruits and Vegetables

Poultry Glossaries of Culinary and Technical Terms

Fish Sources of Equipment and Ingredients

Shellfish Reference Tables

Eggs Index

"Modernist Cuisine costs less per pound than Parmigiano Reggiano."

—NATHAN MYHRVOLD



# SOUSINE

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**Parametric Recipes** 

Selections from Plated-Dish Recipes

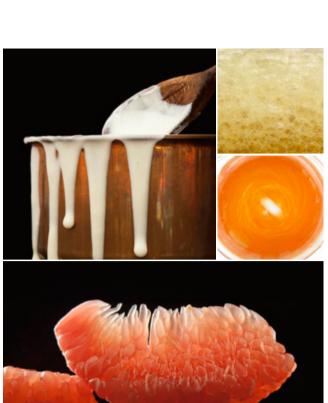
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TAMING THE BREATH OF A WOK Stir-frying is one of the most dynamic of cooking techniques because you control the heat applied to the food primarily by tossing the ingredients. Using a constant circular motion that exploits the round shape of the wok, gather the food together and flip it up off the metal. Don't allow the food to spend much time in direct contact with the hottest part of the wok-the conduction zone-which can quickly scorch its surface. Lift the food pieces so that they spend most of their time cooking in the high-temperature steam in the condensation zone above the wok, with occasional forays into the drier, cooler air of the convection zone. The patina on the wok consists of black oxide, which prevents rust from forming on the metal, and a layer of decomposed fat, which bonds to the metal and yields a smooth, nonstick coating. Teflon and other modern nonstick coatings cannot replace the traditional patina and should never be used on a true wok. At temperatures greater than 260 °C / 500 °F, Teflon breaks down, and at temperatures greater than 340 °C / 645 °F, Teflon molecules decompose into toxic vapors. Woks are usually made from either carbon steel or cast iron. The metal is relatively thin (~3 mm / 1/8 in) so that the pan is light enough to handle with ease. Although aluminum is commonly used to make Western cookware, it is unsuitable for woks because a professional wok burner gets hot enough to melt aluminum. Hot air from the burner rushes past the wok ...... and up into the kitchen hood. As a result, wok cooking is not very efficient. Much of the heat never makes it to the food. The inefficiency does yield one beneficial side effect, however: the rush of hot air helps carry smoke and steam away from the cook and into the hood. The book has 36 annotated cutaway photos like this one.





#### **HOW TO Make Latte Art**

Many professional baristas today present their caffè lattes and cappuccinos with some touch of artistic panache in the form of poured patterns of steamed milk. The effect may seem intricate and complex, but with a little practice it becomes as natural to

the well-trained barista as dosing and tamping are. Below are instructions for making the free-poured rosetta pattern, one of the most popular.





- Prepare an espresso drink and steamed milk (not too hard and dry), tilt the cup slightly, and pour milk slowly into the center of the crema. Lift the back of the cup to tilt it slightly toward you as you pour steadily, but not so fast that the crema breaks up. Keep the lip of the pitcher close to the surface of the coffee to avoid undue turbulence.
- Rock the pitcher to expand the pattern. When a pale cloud of milk breaks the surface, begin rocking the pitcher back and forth to form zigzags of foam against the espresso background. At the same time, draw the pitcher toward the near side of the cup. Do not raise the pitcher higher as the cup fills.
- Complete the design. As you add the last of the foam, raise the pitcher slightly and pour a thin stream back across the surface through the center and to the far side of the cup. This action forms the central stem of the rosetta.







## **AUTHORS**



DR. NATHAN MYHRVOLD is chief executive officer and a founder of Intellectual Ventures, a firm dedicated to creating and investing in inventions. In addition to stimulating the invention of others, Myhrvold is himself an active inventor, with more than 250 patents issued or pending—including several related to food technology. Before founding his

company, Myhrvold was the first chief technology officer at Microsoft. He established Microsoft Research, and during his tenure he oversaw many advanced technology projects. He left Microsoft in 1999 to pursue several interests, including a lifelong interest in cooking and food science.

Myhrvold competed on a team that won first place in several categories at the 1991 World Championship of Barbecue, including first prize in the special pasta category for a recipe that Myhrvold developed on the day of the contest.

After working for two years as a *stagier* at Seattle's top French restaurant, Rover's, Myhrvold completed culinary training with renowned chef Anne Willan at the Ecole De La Varenne. In addition, he has worked as Chief Gastronomic Officer for Zagat Survey, publisher of the popular Zagat restaurant guidebooks. Through his many visits to the world's top restaurants, Myhrvold has become personally acquainted with many of the leading Modernist chefs and the science-inspired cooking techniques they have pioneered.

Myhrvold is himself an accomplished practitioner of Modernist cuisine. He has contributed original research on cooking sous vide to online culinary forums, and his sous vide techniques have been covered in *The New York Times Magazine, Wired*, and *Gourmet's Diary of a Foodie* television series on PBS.

Myhrvold's formal education includes degrees in mathematics, geophysics, and space physics from UCLA, and PhDs in mathematical economics and theoretical physics from Princeton University. In his post-doctoral work at Cambridge University, Myhrvold worked on quantum theories of gravity with the renowned cosmologist Stephen Hawking.

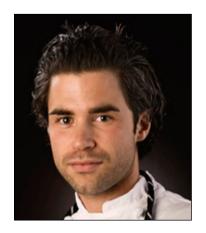


CHRIS YOUNG opened the experimental kitchen at The Fat Duck and worked under world-famous chef Heston Blumenthal for five years to help develop its most innovative dishes. Young completed degrees in mathematics and biochemistry at the University of Washington. He left behind his doctoral work for a job as commis chef at one of Seattle's top-rated restaurants, and quickly earned a reputation for his ability to apply science and technology in the kitchen.

At The Fat Duck, Young expanded the experimental kitchen from one to more than six full-time chefs. He also coordinated the work of several

consultant scientists. Beyond developing new dishes for the Fat Duck's menu, Young managed recipe development for the critically acclaimed first and second seasons of BBC's Heston Blumenthal: In Search of Perfection. Young has also written extensively on the science of food and cooking for The Fat Duck Cookbook and has published scholarly research in the Journal of Agricultural Chemistry and Food Science.

Young has been an invited speaker at the Culinary Institute of America, University of Washington, University of Reading, the British Society of Food Flavourists, and various food companies.

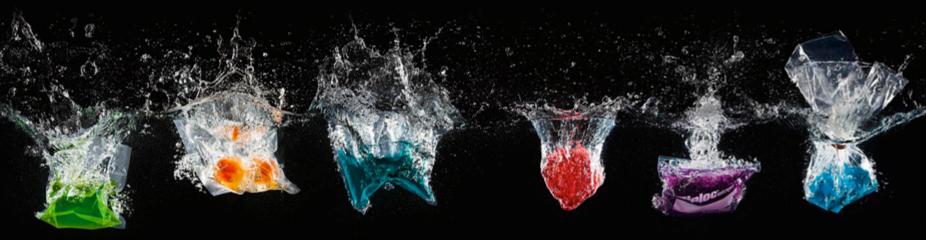


MAXIME BILET received a BA in creative writing, literature, and visual art from Skidmore College. Bilet then graduated with highest honors from the Institute of Culinary Education in New York. He completed a *stage* at Jack's Luxury Oyster Bar and was quickly hired by Jack Lamb to be head

chef there. Moving to London, he accepted a *stage* with Heston Blumenthal's development team at The Fat Duck. Just prior to joining the culinary team at The Cooking Lab as head chef of research and development, Bilet trained as sous chef to open the London branch of Auberge de L'Ile.

The creation of this book required years of effort by a large team. Most of the writing, photography, design, editing, proofing, research, and recipe development and testing took place in the team's kitchen laboratory in Bellevue, Washington.



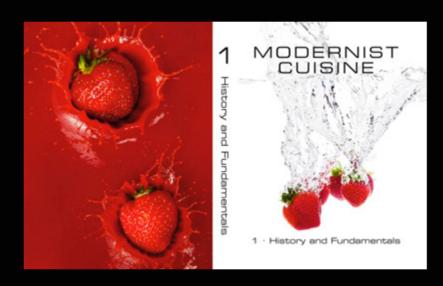


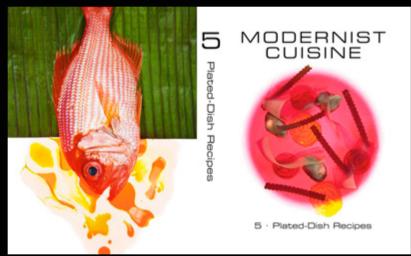
"A fascinating overview of the techniques of modern gastronomy."

—HESTON BLUMENTHAL

"The cookbook to end all cookbooks."

—DAVID CHANG





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Nathan Myhrvold with Chris Young and Maxime Bilet

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Get the inside scoop on The Cooking Lab: sign up for email updates at www.modernistcuisine.com

"A masterpiece...the most important cookbook of the first 10 years of the

21st century."

—GOURMAND

WORLD COOKBOOK AWARDS

