

# In an Ancient Workshop, Discovering Modern Ideas

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Walk into the basement of Columbia's Chandler Hall, and you enter sixteenth-century Europe: leather-clad artisans are melting tin in an iron crucible, boiling elm roots in red wine, and coating roses, dead insects, and taxidermied lizards with butter and wheat oil. After a few hours of work, they will have created exquisitely detailed pewter replicas of the flora and fauna — gifts suitable for any aristocrat.

These craftspeople, graduate students working on Columbia's Making and Knowing Project, are members of a multidisciplinary research team that hopes to gain insights into the mindset of Renaissance craftsmen by reproducing their wares. Led by history professor Pamela Smith, the project is focused on replicating the works of an anonymous Frenchman who, in the last decades of the sixteenth century, obsessively jotted down everything he learned about making pigments, varnishes, colored metals, coins, jewelry, knives, guns, and decorative objects. His 340-page notebook, which is preserved in the Bibliothèque nationale de France and known by its catalog name, BnF Ms. Fr. 640, is one of the most comprehensive accounts of craftsmanship from the era. Until now, though, no modern academics have ever attempted to follow its recipes.

"It's only in the past couple of decades that scholars have come to regard craft-making as a knowledge system that is worthy of serious investigation, rather than as a collection of rote techniques," says Smith, whose team is also producing the first English translation of BnF Ms. Fr. 640.

One reason historians have begun to take an interest, Smith says, is that their study of early-Renaissance European society has taught them that artisans in the period enjoyed a bump in social status as a result of their increased economic importance.

"In addition to producing art objects that collectors were eager to acquire, craftspeople were manufacturing weapons, tools, and other metal items that

everybody needed,” says Smith. “This gave them power.”

By the sixteenth century, artisans had acquired so much prestige that philosophers and other intellectuals began to study the craftsmen’s work to try to figure out how they were honing their techniques. What they witnessed in the craftsmen’s workshops, Smith says, was a revelation: tireless trial-and-error experimentation, as the same procedures were repeated over and over with slight variations each time, with the results documented in notebooks.

“Basically, this was the birth of the modern scientific process,” she says. “Inspired by what they saw in the workshops, the great natural philosophy and medical societies of Europe would, by the mid-seventeenth century, embrace laboratory experimentation as the basis for accumulating new knowledge about the physical world.”

Over the past three semesters, students enrolled in a graduate course that Smith is teaching in conjunction with the Making and Knowing Project have reproduced about fifty recipes from BnF Ms. Fr. 640.

“There are certain things you can’t learn about this craftsman and his social milieu without getting your hands dirty,” says Smith. “How long did it take him to acquire the skill to cast a rose in metal? Did he document his techniques so clearly that other people might copy them easily? How did he experience and understand the hardening of plaster and the behavior of metal flowing in the molds? These are the types of mysteries we want to solve.”

## **A recipe for life casting**

1. Graduate students are recreating recipes from a sixteenth-century artisan's handwritten notebook.



# Monter une rose 153

du rosier

Courrogn de bransche qui sont au part ailleurs et  
 la faire pour que que soit fort de la tige et pour  
 by trop grand mont Oyle fait a part Et la rose  
 C qui est de bouton a part Et puz a oy raport  
 aultz pouldur de bransche et foelle de rosier a la  
 que de la rose a laquelle oy laiffre de puz de  
 petite bonte de bransche Mode la foelle en rose  
 le plus bar que tu pouras d'ouir le mont pour ce que  
 la creche souffre Tu y puz aultz mont plus subre  
 foelle de puz de essant de puz de l'air sur l'aultre de  
 distingant aultz le foelle <sup>ne dit de</sup> Et pour le regard  
 de la rose le plus de mont by leger d'ouir de bierre fonde  
 au dor de la foelle <sup>avec puz de foelle de rose ou a celle de d'ouir</sup>  
 pour s'ouir <sup>assez que e fait de puz de rose de d'ouir de bierre fonde</sup>  
 de rosier foelle et semblable que sont plain  
 C qui se puz aplaire sans le gaste a d'ouir gote  
 pour omir by mont quand il se irait Et ne l'oye  
 de la creche <sup>Tout de faire de de souffre et</sup>  
 plus subre gote Et aultz by est le plus facile  
 C aultz l'aultre se puz faire aultz Et aultz de petite  
 f'ouir de air a d'ouir de creche de foelle a foelle  
 le plus f'ouir de gote Meisme le plus faire  
 de puz la puz de foelle de puz by filoy de air  
 qui se raporta au grot Tout de la foelle de grot  
 d'ouir <sup>Le principal est de laiffre by foelle de</sup>  
 ment se ont plus que le m'ouir de souffre d'ouir  
 pour faire sortir la air pour ce que quand le mont se  
 fait la creche se hient de attache Mais quand il  
 se foird de puz de d'ouir aultz de bierre ou quand  
 oy entre l'air a by par le petit puz  
 Monit la rose de air de by plus que la m'ouir de  
 de creche d'ouir de puz par d'ouir de grot de air  
 de quand tu aurat grot by fait de d'ouir de puz fore  
 in f'ouir a ce que tu aurat a faire puz de rose de  
 by bierre Mais pour ce que le fait se f'ouir de puz de  
 foelle de air long temps de d'ouir by omir de air de  
 le puz de air de la tige de air



Tu puz by  
 de mont by puz  
 de puz au  
 bonte de hie  
 qui sont plain  
 de foelle de  
 aultz de puz  
 par de d'ouir de  
 bierre fonde  
 pour ce que  
 foelle de puz  
 grand de puz  
 de la hie  
 de puz  
 d'ouir de air  
 par aultz de  
 f'ouir  
 de puz de d'ouir  
 de mont la  
 rose de air  
 by puz de grot  
 puz de by bonte  
 C puz de raport  
 de plus long  
 de l'oy de air  
 pour ce que  
 rose de puz  
 de grand de air  
 C puz de air



2. A rose is coated with butter so that its petals retain their shape when cast in plaster.



3. Clay walls are built around the rose, and a mixture of plaster, ground bricks, water, and ammonium chloride is poured inside.



4. The basin is heated in a kiln. The rose turns to ash but leaves its impression in plaster.

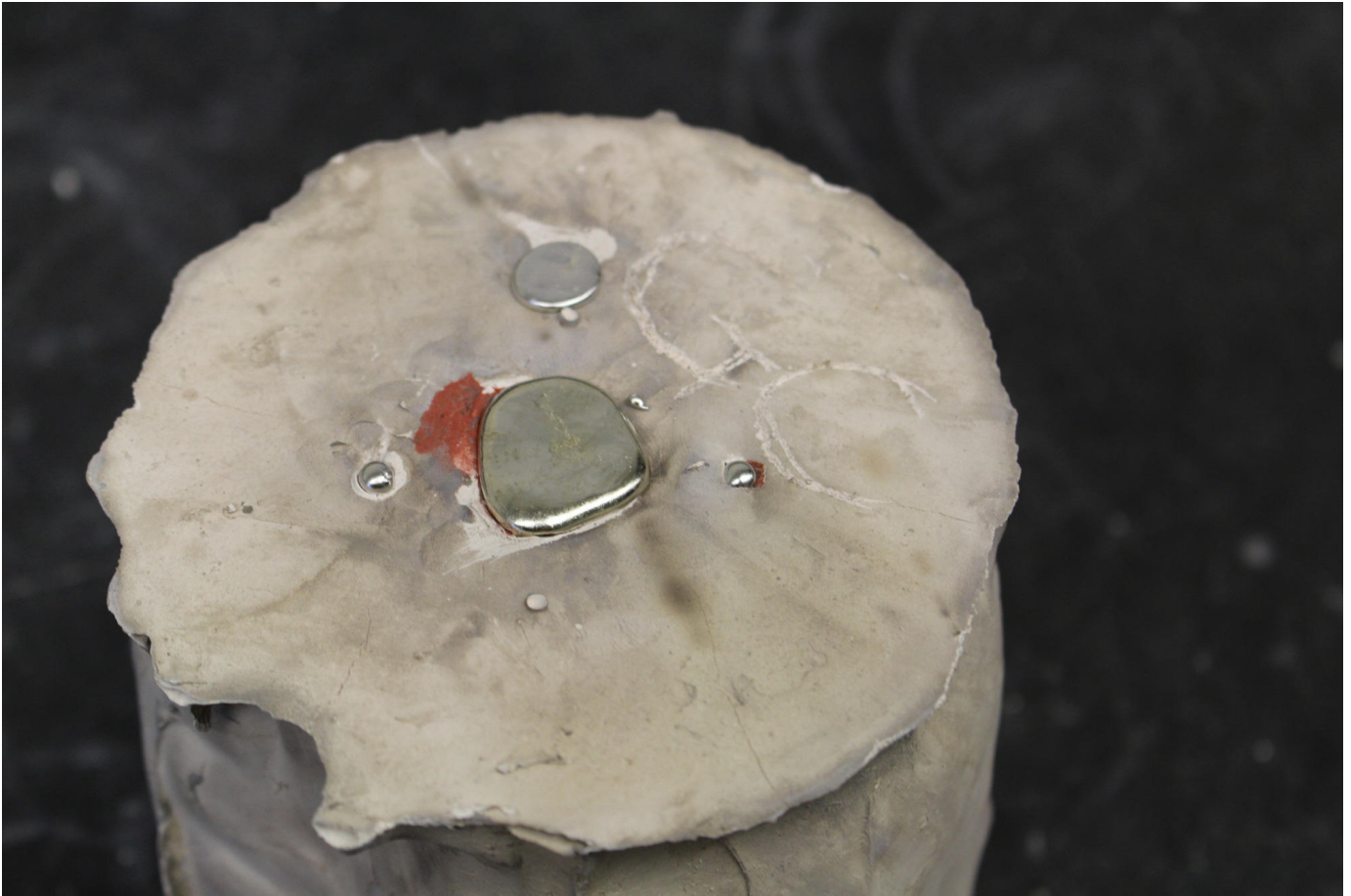


5. Tin and lead are melted to form pewter, an alloy whose malleability made it popular among Renaissance craftspeople.





6. The hot pewter is poured into a mold very slowly, so that it fills every crevice.

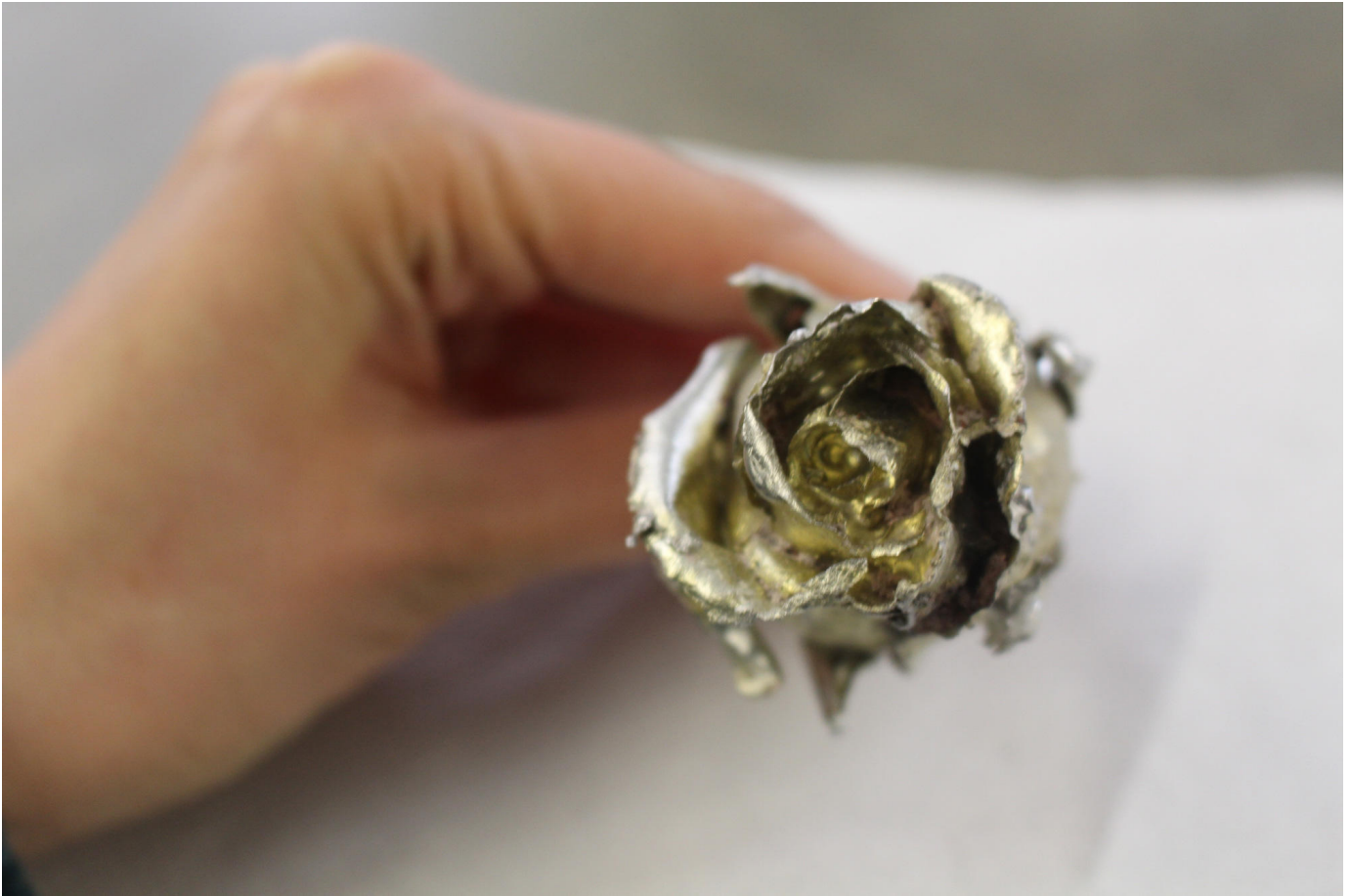


7. Once the metal cools, the flower is broken out of the plaster, and any rough edges are filed away.





8. "An object like this was viewed as the pinnacle of the craftperson's ability to imitate nature," says historian Pamela Smith.



*Photos courtesy of the Making and Knowing Project.*



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