What is claimed is:

1. An additive manufacturing system comprising:

an energy source;

a powder supply;

a build chamber comprising:

a base plate; and

two or more variable build plates coupled to the base plate, the two or more variable build plates each having one or more adjustable features, the two or more variable build plates configurable to position two or more parts at different heights relative to a top level of the build chamber; and

a control system configured to control the energy source to fuse material from the powder supply to at least one of the two or more parts while the two or more parts are respectively positioned by the two or more variable build plates at different heights relative to the top level of the build chamber, wherein the control system is configured to modify an orientation of at least one of the two or more parts such that a different build surface orientation is used for adding one or more layers of material to the two or more parts in parallel.

2. The additive manufacturing system of claim 1, further comprising a measurement system configured to determine a height of the two or more parts.

3. The additive manufacturing system of claim 2, wherein the control system is configured to adjust at least one of the two or more variable build plates based on the height of the two or more parts.

4. The additive manufacturing system of claim 3, wherein adjustment of the at least one of the two or more variable build plates comprises aligning a build region of the two or more parts level with respect to the top level of the build

chamber.

5. The additive manufacturing system of claim 4, wherein the control system is configured to adjust the base plate relative to the top level of the build chamber after a new layer of material is fused to the build region of the two or more parts.

6. The additive manufacturing system of claim 1, wherein the one or more adjustable features of the two or more variable build plates comprise one or more of a telescopic shaft, a ball and socket joint, and a multi-axis robotic actuation system.

7. The additive manufacturing system of claim 1, wherein the base plate comprises a conveyor and a spring-loaded cover, and the spring-loaded cover is configured to isolate powder in the build chamber from the conveyor.

8. The additive manufacturing system of claim 1, further comprising a powder spray unit, wherein the control system is configured to selectively apply powder to at least one of the two or more parts using the powder spray unit.

9. The additive manufacturing system of claim 1, wherein the control system is configured to independently control a height and part orientation for each of the two or more variable build plates.

10. A method for additive manufacturing, the method comprising:

positioning two or more parts at different heights relative to a top level of a build chamber, the two or more parts respectively attached to two or more variable build plates coupled to a base plate, wherein the two or more variable build plates each have one or more adjustable features;

modifying an orientation of at least one of the two or more parts such that a different build surface orientation is used for adding one or more layers of material to the two or more parts in parallel; and

controlling an energy source to fuse material from a powder supply to at least

one of the two or more parts while the two or more parts are respectively positioned by the two or more variable build plates at different heights relative to the top level of the build chamber.

11. The method of claim 10, further comprising:

using a measurement system to determine a height of the two or more parts.

12. The method of claim 11, further comprising:

adjusting at least one of the two or more variable build plates based on the height of the two or more parts.

13. The method of claim 12, wherein adjusting the at least one of the two or more variable build plates comprises aligning a build region of the two or more parts level with respect to the top level of the build chamber.

14. The method of claim 13, further comprising:

adjusting the base plate relative to the top level of the build chamber after a new layer of material is fused to the build region of the two or more parts.

15. The method of claim 10, wherein the one or more adjustable features of the two or more variable build plates comprise one or more of a telescopic shaft, a ball and socket joint, and a multi-axis robotic actuation system.

16. The method of claim 10, wherein the base plate comprises a conveyor and a spring-loaded cover, and the spring-loaded cover is configured to isolate powder in the build chamber from the conveyor.

17. The method of claim 10, further comprising:

applying powder selectively to at least one of the two or more parts using a powder spray unit.

18. The method of claim 10, further comprising:

independently controlling a height and part orientation for each of the two or more variable build plates.