WHAT IS CLAIMED IS:

1. A system comprising:

a bed having a mattress configured to support a sleeper in a sleep environment;

a sensor system configured to:

sense at least one physical phenomenon of the bed or the sleeper through a sleep session;

transmit sensor data to a controller based on the sensed physical phenomenon through the sleep session; and

the controller, wherein the controller comprises at least one processor and memory, the controller configured to:

receive, through the sleep session, the sensor data;

select, from a plurality of algorithms, a selected algorithm based on at least one of the sensor data, user input, and checking a clock, wherein the algorithms include (i) a state-based algorithm and (ii) a schedule-based algorithm;

update, through the sleep session, using the selected algorithm, a current sleep state of the sleeper;

track the sleep session based on the update of the current sleep state of the sleeper through the sleep session;

update, through the sleep session, using the tracking of the sleep session, a target environmental-parameter;

send, through the sleep session, automation instructions to an environmental controller based on the update of the target environmental-parameter;

update, through the sleep session, using the sensor data, a current sleeping determination for the sleeper, the sleeping determination having possible values of awake and asleep; and

track the sleep session through a sleep state-time based schedule based on a length of time that has elapsed since the current sleeping determination was updated to asleep;

wherein the sleep state-time based schedule comprises data stored to memory defining a sequence of phases and an order of the sequence of phases, each phase specifying i) one or more values for the current sleeping determination; and ii) one or more values for the target environmental-parameter.

2. The system of claim 1, further comprising the environmental controller configured to:

receive the automation instructions from the controller; and

engage one or more devices according to the automation instructions such that the sleep environment of the sleeper is updated through the sleep session.

3. The system of claim 2, wherein the mattress includes at least one air chamber, wherein engaging the one or more devices according to the automation instructions include engaging a pump to increase pressure to the at least one air chamber of the mattress such that a firmness of the mattress is increased.

4. The system of claim 3, wherein engaging the one or more devices according to the automation instructions includes engaging the pump to decrease pressure to the at least one air chamber of the mattress such that the firmness of the mattress is decreased.

5. The system of claim 1, wherein the target environmental-parameter is a firmness of the mattress.

6. The system of claim 1, wherein the at least one physical phenomenon includes a heartrate, a respiration rate, a breathing rate, snoring, bodily movement of the sleeper, a determination that the sleeper has fallen asleep, a duration of time that has passed since sleep onset, a pressure change in the mattress, a temperature of the sleeper, and a temperature of a top surface of the mattress.

7. The system of claim 1, wherein the selected algorithm is the state-based algorithm, wherein the controller is configured to:

update, through the sleep session, using the sensor data, the current sleep state of the sleeper; and

track the sleep session through a sleep-state schedule based on the update of the current sleep state of the sleeper through the sleep session.

8. The system of claim 7, wherein the sleep-state schedule is defined using successive phases, each phase specifying i) one or more values for the current sleep state; and ii) one or more values for the target environmental-parameter.

9. The system of claim 8, wherein tracking the sleep session through the sleep-state schedule based on the update of the current sleep state of the sleeper through the sleep session comprises:

maintaining identification of the current sleep state as a first phase of the successive phases;

determining that the current sleep state matches the one or more values for the current sleep state specified by a second phase; and

updating the identification of the current sleep state to a second phase that is successive to the first phase in the successive phases.

10. The system of claim 8, wherein the successive phases comprise i) an initial sleep phase, ii) a middle sleep phase, and iii) a near-wakeup phase.

11. The system of claim 10, wherein the initial sleep phase is at least thirty minutes after the sleeper has entered the bed.

12. The system of claim 10, wherein the near-wakeup phase is between thirty and forty minutes before an alarm set by the sleeper.

13. The system of claim 10, wherein:

the initial sleep phase specifies i) an NREM sleep state for less than a threshold time period; and ii) a user-specified pressure setting;

the middle sleep phase specifies i) an NREM sleep state for greater than the threshold time period; and ii) an increased pressure setting that is greater than the user-specified pressure setting; and

the near-wakeup sleep phase specifies i) an REM sleep less than a threshold period of time near a scheduled wake-up time; and ii) the user-specified pressure setting.

14. The system of claim 1, wherein tracking the sleep session through the sleep state-time based schedule based on a length of time that has elapsed since the current sleep determination was updated to asleep comprises:

maintaining identification of the current sleep determination as a first phase of the order of sequence of phases;

determining that the current sleep determination matches the one or more values for the current sleep determination specified by a second phase; and

updating the identification of the current sleep determination to a second phase that is successive to the first phase in the order of sequence of phases.

15. The system of claim 1, wherein the controller is at least one of a home automation device, a mobile device, and a remote server that is in data communication with the sensor system and the environmental controller.

16. The system of claim 1, wherein the controller includes the environmental controller.

17. A system comprising:

a bed having a mattress configured to support a sleeper in a sleep environment;

a sensor system configured to:

sense at least one physical phenomenon of the bed or the sleeper through a sleep session;

transmit sensor data to a controller based on the sensed physical phenomenon through the sleep session;

the controller, wherein the controller comprises at least one processor and memory, the controller configured to:

receive, through the sleep session, the sensor data;

update, through the sleep session, using the sensor data, a current sleep state of the sleeper;

track the sleep session through a sleep-state schedule based on the update of the current sleep state of the sleeper through the sleep session, wherein the sleep-state schedule comprises data stored to memory defining a sequence of phases and an order of the sequence of phases, each phase specifying i) one or more values for the current sleeping determination; and ii) one or more values for the target environmental-parameter;

update, through the sleep session, using the tracking of the sleep session, a target environmental-parameter; and

send, through the sleep session, automation instructions to an environmental controller based on the update of the target environmental-parameter; and

the environmental controller configured to:

receive the automation instructions; and

engage one or more devices according to the automation instructions such that the sleep environment of the sleeper is updated through the sleep session.

18. The system of claim 17, wherein tracking the sleep session through a sleep-state schedule based on the update of the current sleep state of the sleeper through the sleep session comprises:

maintaining identification of the current sleep state as a first phase of the order of sequence of phases;

determining that the current sleep state matches the one or more values for the current sleep state specified by a second phase; and

updating the identification of the current sleep state to a second phase that is successive to the first phase in the order of sequence of phases.

19. The system of claim 17, wherein the sequence of phases comprise i) an initial sleep phase, ii) a middle sleep phase, and iii) a near-wakeup phase.

20. The system of claim 19, wherein:

the initial sleep phase specifies i) an NREM sleep state for less than a threshold time period; and ii) a user-specified pressure setting;

the middle sleep phase specifies i) an NREM sleep state for greater than the threshold time period; and ii) an increased pressure setting that is greater than the user-specified pressure setting; and

the near-wakeup sleep phase specifies i) an REM sleep less than a threshold period of time near a scheduled wake-up time; and ii) the user-specified pressure setting.

21. The system of claim 17, wherein the controller is at least one of a home automation device, a mobile device, and a remote server that is in data communication with the sensor system and the environmental controller.

22. The system of claim 17, wherein the controller includes the environmental controller.

23. The system of claim 17, wherein the mattress includes at least one air chamber, wherein engaging the one or more devices according to the automation instructions include

engaging a pump to increase pressure to the at least one air chamber of the mattress such that a firmness of the mattress is increased.

24. The system of claim 23, wherein engaging the one or more devices according to the automation instructions includes engaging the pump to decrease pressure to the at least one air chamber of the mattress such that the firmness of the mattress is decreased.

25. The system of claim 17, wherein the target environmental-parameter is a firmness of the mattress.

26. The system of claim 17, wherein the at least one physical phenomenon includes a heartrate, a respiration rate, a breathing rate, snoring, bodily movement of the sleeper, a determination that the sleeper has fallen asleep, a duration of time that has passed since sleep onset, a pressure change in the mattress, a temperature of the sleeper, and a temperature of a top surface of the mattress.

27. A system comprising:
a bed having a mattress configured to support a sleeper in a sleep environment;
a sensor system configured to:
sense at least one physical phenomenon of the bed or the sleeper through a sleep session;
transmit sensor data to a controller based on the sensed physical phenomenon through the sleep session;
the controller, wherein the controller comprises at least one processor and memory, the controller configured to:
receive, through the sleep session, the sensor data;
update, through the sleep session, using the sensor data, a current sleeping determination for the sleeper, the sleeping determination having possible values of awake and asleep;
track the sleep session through a sleep-state schedule based on a length of time that has elapsed since the current sleeping determination was updated to asleep, wherein the sleep state schedule comprises data stored to memory defining a sequence of phases and an order of the sequence of phases, each phase specifying i) one or more values for the current sleeping determination; and ii) one or more values for the target

environmental-parameter;

update, through the sleep session, using the tracking of the sleep session, a target environmental-parameter; and

send, through the sleep session, automation instructions to an environmental controller based on the update of the target environmental-parameter; and

the environmental controller configured to:

receive the automation instructions; and

engage one or more devices according to the automation instructions such that the sleep environment of the sleeper is updated through the sleep session.

28. The system of claim 27, wherein tracking the sleep session through a sleep-state schedule based on a length of time that has elapsed since the current sleep determination was updated to asleep comprises:

maintaining identification of the current sleep determination as a first phase of the order of sequence of phases;

determining that the current sleep determination matches the one or more values for the current sleep determination specified by a second phase; and

updating the identification of the current sleep determination to a second phase that is successive to the first phase in the order of sequence of phases.

29. The system of claim 27, wherein the sequence of phases comprise i) an initial sleep phase, ii) a middle sleep phase, and iii) a near-wakeup phase.

30. The system of claim 29, wherein:

the initial sleep phase specifies i) an NREM sleep state for less than a threshold time period; and ii) a user-specified pressure setting;

the middle sleep phase specifies i) an NREM sleep state for greater than the threshold time period; and ii) an increased pressure setting that is greater than the user-specified pressure setting; and

the near-wakeup sleep phase specifies i) an REM sleep less than a threshold period of time near a scheduled wake-up time; and ii) the user-specified pressure setting.

31. The system of claim 27, wherein the controller is at least one of a home automation device, a mobile device, and a remote server that is in data communication with the sensor system and the environmental controller.

32. The system of claim 27, wherein the controller includes the environmental controller.

33. The system of claim 27, wherein the mattress includes at least one air chamber, wherein engaging the one or more devices according to the automation instructions include engaging a pump to increase pressure to the at least one air chamber of the mattress such that a firmness of the mattress is increased.

34. The system of claim 33, wherein engaging the one or more devices according to the automation instructions includes engaging the pump to decrease pressure to the at least one air chamber of the mattress such that the firmness of the mattress is decreased.

35. The system of claim 27, wherein the target environmental-parameter is a firmness of the mattress.

36. The system of claim 27, wherein the at least one physical phenomenon includes a heartrate, a respiration rate, a breathing rate, snoring, bodily movement of the sleeper, a determination that the sleeper has fallen asleep, a duration of time that has passed since sleep onset, a pressure change in the mattress, a temperature of the sleeper, and a temperature of a top surface of the mattress.