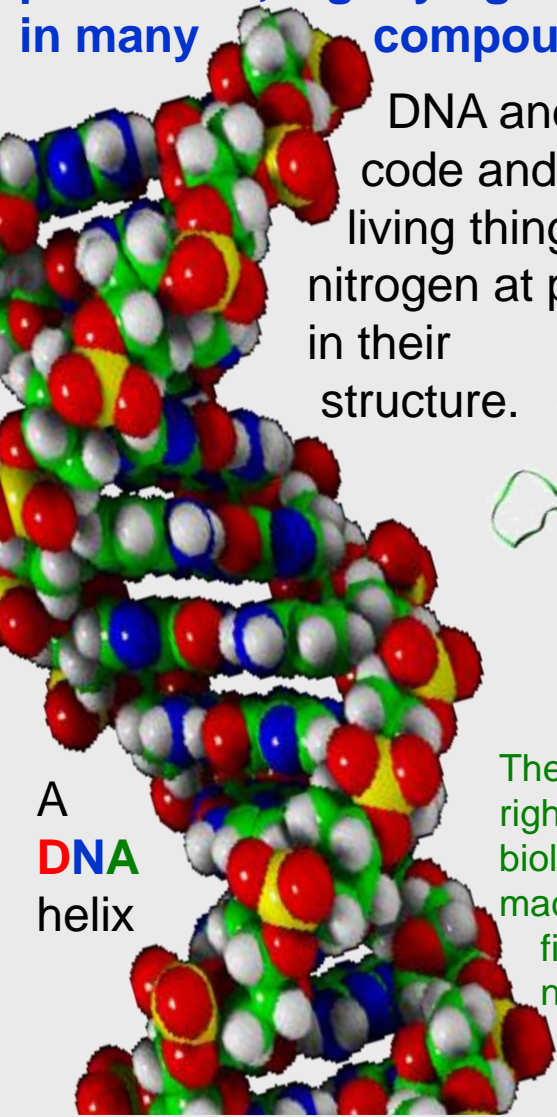


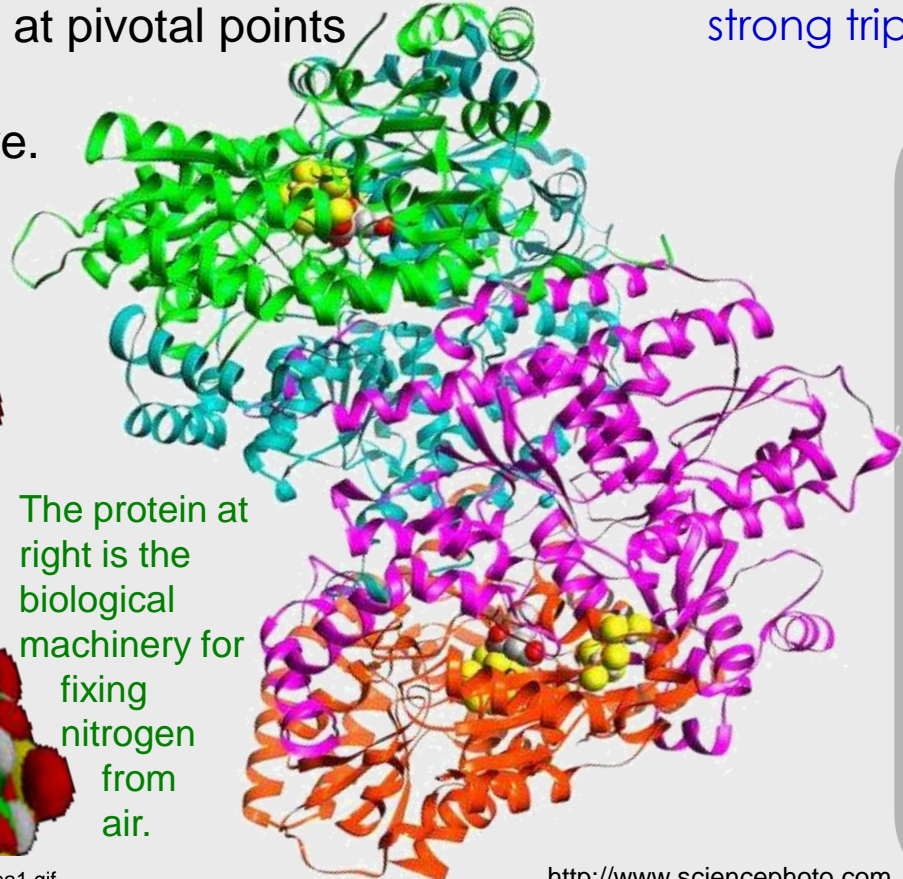
Nitrogen Fixation

Nitrogen is the stuff of life. Ironically the prefix *azo-*, signifying the presence of nitrogen in many compounds, means *without life*.

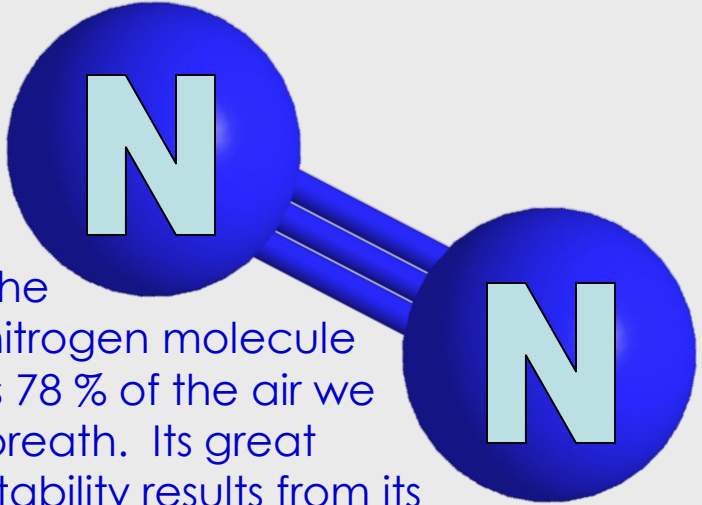
DNA and proteins, the genetic code and building blocks of all living things, contain nitrogen at pivotal points in their structure.



A DNA helix



The protein at right is the biological machinery for fixing nitrogen from air.



The nitrogen molecule is 78 % of the air we breath. Its great stability results from its strong triple $N\equiv N$ bond.

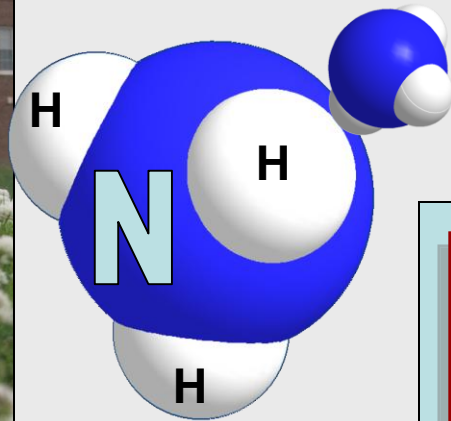


<http://blog.electricbricks.com/wp-content/uploads/airbag.jpg>

Sodium azide is an explosive compound that rapidly releases nitrogen gas to fill air bags in cars.

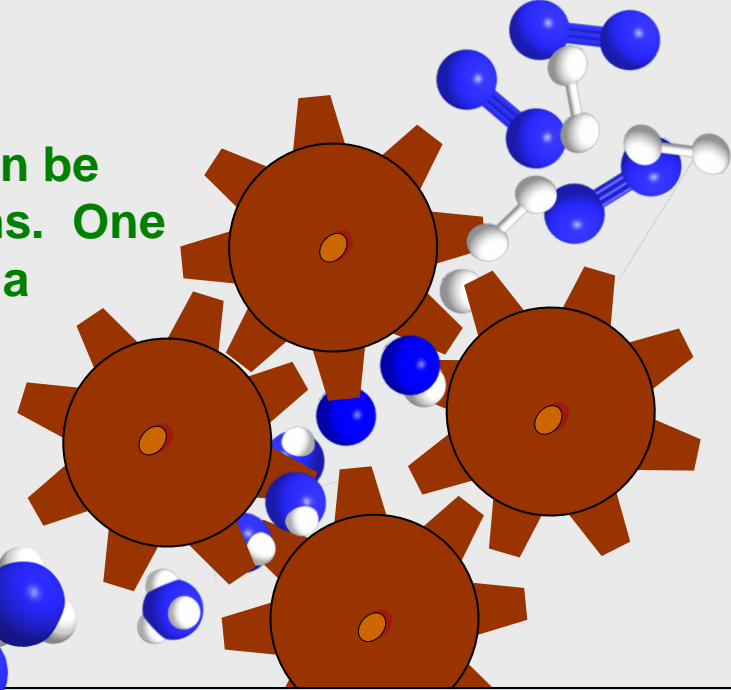


Fixed nitrogen is in a chemical form that can be used by living systems. One example is ammonia, a small molecule with big potential.



<http://escience.ws>

A field of clover near Laney Hall (UCA). Clover harbors nitrogen-fixing bacteria in its roots. This process enriches the soil by replenishing its nitrogen content.



Ammonia is used to clean the floor and in fertilizers. It may one day be used to run our cars.

NH₃
carbon-free liquid fuel
<http://www.nh3fuelassociation.org/>