

October 2012 Newsletter

[Current Events in Context](#) | [New Courses](#) | [Updated Courses](#)
[Highlights for High School](#) | [Views from Supporters](#)

Current Events in Context: A Supersonic Human



Image of the high altitude jump by [Wolf Gang](#).

Austrian daredevil Felix Baumgartner jumped from his capsule, plummeted to earth, and became the first human to achieve supersonic speeds outside a vehicle. His capsule had reached 24 miles in elevation, beating the former record for highest manned balloon flight, and his jump had attracted one of the largest webcast audiences ever, exceeding more than 8 million views on YouTube.

Baumgartner's jump presented significantly great engineering challenges. His extreme elevation, the equivalent of four Mount Everests stacked atop each other, required a pressurized suit. At Baumgartner's peak altitude the boiling point of water is below 98 degrees, so a breach in his suit would have literally caused

As online education continues to evolve and serve more people eager to learn, OCW is an increasingly critical free and open resource.

We need your help to continue to create the educational materials that broaden educational opportunities and change lives.

Please support MIT OpenCourseWare and online education's transformation with a [donation](#) during our Fall fund raising campaign.

If you have already made a donation, then we thank you for joining our community of supporters!

his blood to boil. Other dangers included radiation, temperature, decompression, parachute failure, and excessive rotation—if Baumgartner got into an uncontrolled spin in the frictionless upper layers of the atmosphere, the centrifugal force could kill him.

After just 35 seconds of free flight he hit 690 miles per hour, and he was supersonic within a minute. Baumgartner reached a peak speed of 833 miles per hour, or Mach 1.24, before the thicker air of the troposphere began to slow his descent to about 120 mph, and he opened his chute.

The nearly flawless jump ended only 23 miles away from his launch point, and Baumgartner suffered no injuries. His jump will provide new data to help scientists understand how the human body experiences such speeds and elevation, and proves that astronauts can eject from a space capsule at high altitudes and survive.

OpenCourseWare offers several courses that cover different aspects of this amazing achievement:

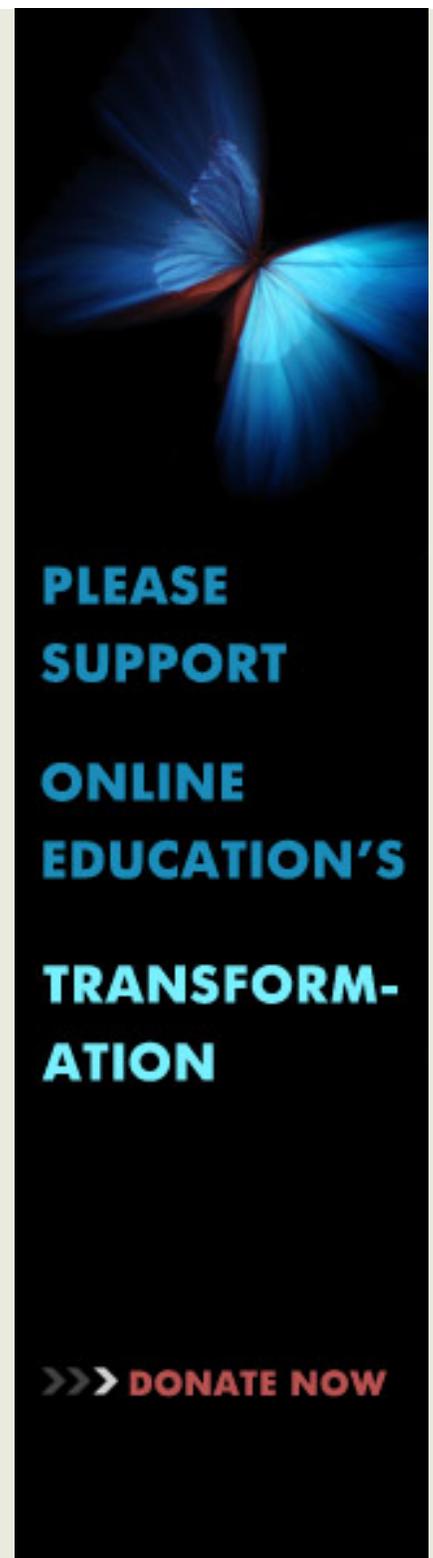
- [16.423J Aerospace Biomedical and Life Support Engineering](#) studies how the human body deals with altered environments, studying bone and muscle mechanics, as well as the cardiovascular system.
- [12.810 Dynamics of the Atmosphere](#) covers the properties of the earth's multiple atmospheric layers.
- [2.00AJ Exploring Sea, Space, & Earth: Fundamentals of Engineering Design](#) reviews a range of engineering themes for space, earth and ocean exploration.
- [16.100 Aerodynamics](#) studies fluid mechanical concepts and aerodynamic performance of bodies in supersonic flight.

New Courses

- [21M.269 Studies in Western Music History: Quantitative and Computational Approaches to Music History](#)
- [24.235J Philosophy of Law](#)
- [CMS.300 Introduction to Videogame Studies](#)

Updated Courses

- [2.29 Numerical Fluid Mechanics](#)
- [12.086 Modeling Environmental Complexity](#)



Make your donation can count event more with a matching gift from your company. To find out whether your company has a matching gift policy, please enter your employer's name in the [MIT matching gifts page](#).

- > [See all courses](#)
- > [Subscribe to the RSS](#)

Highlights for High School



ChemLab Boot Camp follows 14 MIT freshmen as they face the challenges of learning chemistry the MIT way.

Every January, the MIT Chemistry Department runs a four-week laboratory "boot camp" for freshmen (also known as [5.301 Chemistry Laboratory Techniques](#)), and those who pass are guaranteed a job in an MIT research lab.

Now you can follow along as 14 students learn everything from column chromatography to protein assays.

Episodes one through six are now online. See teams compete to grow the biggest crystal, recover from mishaps, and rise to other challenges.

- > [See the newest ChemLab Boot Camp episodes](#)
- > [Sign up for e-mail notifications of episode releases and special content.](#)

Views from Supporters



"I donate in the hope that promising young students from economically disadvantaged areas in our own backyard and also in developing countries can take advantage of these fantastically well-produced learning materials well into the future.

I commend your efforts and sincerely hope you continue to innovate and augment your course offerings and bring them to an ever-widening audience. Kudos! "

- Peter, Independent Learner, Canada

Turn a good deal
into a good deed.

Shop [amazon.com](#) and support

OCW

[Learn More >>](#)

OCW is grateful for the support of:



Ab INITIO
Ab Initio and OpenCourseWare:
Built on fundamentals

[> Read more](#)

Tell us what you think of OCW at ocw-feedback@mit.edu.



© 2002-2012 MIT > [Privacy and Terms of Use](#)

MIT OpenCourseWare is located at: One Broadway, Cambridge, MA 02142