International Space University (ISU)

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ISU - Founded April 12, 1987 at MIT
First Chancellor: Sir Arthur C. Clarke

from the ISU Credo

An institution…

• “which recognizes the importance of interdisciplinary studies for the successful exploration and development of space. … “

• “where students and faculty from all backgrounds are welcomed; where diversity of culture, philosophy, lifestyle, training and opinion are honored and nurtured.”

ISU Founders:
Todd Hawley, Bob Richards, Peter Diamandis
(also founders of SEDS & SpaceGen)
WHAT IS ISU today?

- A graduate school of interdisciplinary study
- Diverse international student body and experienced international faculty
- Dedicated to an open & diverse exchange of ideas and to life-long learning and growth

2006 Masters class at ISU’s Central Campus in Strasbourg, France
The 2700+ ISU alumni have come from 100 countries:
~ 85% are active in the space sector, many in key positions worldwide
1/3 of recent graduates are women, incl. 57% of U.S. alumni in 2008
ISU DEVELOPS FUTURE SPACE LEADERS & EXPERTS

ISU’s “3 i’s”: interdisciplinary graduate-level training, in an international, intercultural team-building environment

- A competitive edge for careers in space-related fields
- Help in making career shifts within the space sector
- Informal “membership” in an international network of leading space experts and professionals

ISU also offers mid- and senior-level professional development (e.g., Executive MBA; 1-week Space Odyssey Institute), and career shifts into the space sector (e.g., Executive Space Course)
ISU ACADEMIC PROGRAMS

- **Space Studies Program (SSP)**
  - 9-week program (July/Aug) at leading universities and research institutions around the world

- **Master of Space Studies & Master of Space Management**
  - Typically, a 12-month program: 9 months at ISU’s Central Campus in Strasbourg + 3 month internship world-wide
  - SSP satisfies the first of five academic ‘modules’

- All programs embrace the “3 i’s” (international, interdisciplinary, intercultural) in their methodology.

  - All include: Team Projects, which develop teamwork skills and ‘out-of-the-box’ thinking, and Professional Visits, to learn about ‘local’ aerospace & high-tech companies & organizations.
Example of an ISU Team Project (TP) Composition: *Suborbital Flight TP from Masters 2008 class*

(approximately 1/2 of the Masters 2008 class)

24 Graduate students from 15 countries, with backgrounds in:
- Engineering – 13
- Space Science/Mathematics – 4
- Medicine – 1 (an MD)
- Law/Diplomacy – 3 (one a lawyer)
- International Business – 2
- Architect – 1

**Note** -- Professional experience included:
- Experienced Pilot/Flight Controller
- U.K Air Force Helicopter Pilot
- U.S. Air Force Communications Engineer
ISU SSP HOST SITES 1988 - 2009

NORTH AMERICA:
★ Boston (USA) 1988
★ Toronto (Canada) 1990
★ Huntsville (USA) 1993
★ Houston (USA) 1999
★ Cleveland (USA) 1998
★ Pomona (USA) 2002
★ Vancouver (Canada) 2005

SOUTH AMERICA:
★ Valparaiso (Chile) 2000

EUROPE:
★ Strasbourg (France) 1989, 2003, 2006
★ Toulouse (France) 1991
★ Barcelona (Spain) 1994
★ Stockholm (Sweden) 1995
★ Vienna (Austria) 1996
★ Bremen (Germany) 2001

ASIA:
★ Kitakyushu (Japan) 1992
★ Nakhon Ratchasima (Thailand) 1999
★ Beijing (China) 2007

AUSTRALIA:
★ Adelaide 2004

SSP07 in Beijing: 117 students from 27 countries
• Average age: 32
• 49% > 3 years experience

2008: Barcelona, Spain
(at NASA Ames Research Center)
Team Projects for Masters 2007

• TP Full Moon: Storage and delivery of oxygen and hydrogen for lunar exploration
  – Examined “missing links” (as identified by NASA) in the Lunar In-Situ Resource Utilization (ISRU) processing

• TP START: Space Tools supporting Archaeological Research and Tasks
  – Developed web-based system to guide archeologists in usage of space resources to help identify and explore “heritage sites”
  – End-product embraced by UNESCO; linked to from its website.
SSP07 Team Projects (Beijing)

- **TP Archive**: Lunar Biological and Historical Archive (Phoenix)

- **TP Earthquake**: The Use of Space Technologies to Monitor and Respond to Earthquakes (Tremor)

- **TP Service**: On-Orbit Servicing, Future Capabilities for Space Missions (Doctor)

- **TP STM**: Space Traffic Management
Team Projects in 2008

• Suborbital Transport (Masters); Spaceports (SSP)
  – Interactions with FAA Commercial Space Transportation Office

• Polar Lunar Base (Masters)
  – Interactions with NASA exploration managers

• Volcano: Use of Space Technologies for Monitoring Volcano Hazards
  – Interactions with NASA Earth Applications staff

• Google Lunar X-Prize
  – Interactions with NASA & X-Prize Foundation

Results regularly briefed at int’l conferences (e.g., IAC) and to end users (e.g., NASA, FAA AST)
A modern facility, including ample lab space with a growing inventory of test and research equipment.
New & Future Developments

from the *ISU Credo*, an institution which...

• “...strives to promote an understanding and appreciation of the Cosmos through the constant evolution of new programs and curricula...”

  ✓ **Executive Space MBA**: multiple 2-week residency periods over a minimum of 18 months, combined with distance-learning & independent research.

• “...will be augmented by an expanding base of campus facilities, networks and affiliations both on and off the Earth.”

  ✓ The ISU International Institute for Space Commerce on the Isle of Man

AND EVENTUALLY ...
Future ISU “Satellite” Campus?
WHAT ARE ISU ALUMNI SAYING?

ISU gave me...

- Broadened perspective
- International awareness
- Teamwork skills
- Improved technical skills and knowledge
- Widespread professional network
- Enhanced job opportunities
- Career advancement

The “Gold Standard” in Interdisciplinary Space Education

www.isunet.edu