

United Nations/Austria Symposium  
Access to Space: Holistic Capacity-Building for  
the 21<sup>st</sup> Century

3-7 September 2017  
Graz, Austria

*Session 8: Workshop on education curricula for  
space technology and space law*

Education Curriculum for Space Law  
Capacity-building:  
Lessons from the McGill Model

Ram Jakhu ©  
McGill University  
Montreal, Canada



# Outline

- A holistic approach to space law education and capacity-building
- UN Recommendations for space law curricula
  - The UN Space Curriculum
- Unique approach to legal education at McGill
  - Evolution of the McGill Space Law Curriculum
  - Space Law Courses on offer at McGill
  - Success of the McGill Model
- Recommendations and Conclusions

**John Cobb Cooper: Founder of the McGill Institute >**



# A holistic approach to space law education and capacity-building

## Objective:

Define new innovative and effective approaches to overall capacity-building and development needs as a fundamental pillar of **global space governance**.

*UNISPACE+50 Thematic Priority 7: Capacity-Building for the 21<sup>st</sup> Century (2016)*

In space law education, there is a need to “**consider integrated education and training for more robust and efficient capacity-building actions in the 21st Century**”

*UNOOSA Director Simonetta di Pippo (2016)*

# Unique nature of space law as a discipline and study

- Complexity of activities and actors in the space domain
- Complexity of space technology and applications that require of technical and scientific understanding;
- Complexity of impact of space activities and applications on science, economics, society, (geo)politics, strategic security, and sustainability of humanity
- Part of international space law, but also growing body of national (regional) space laws
- Unique rules and principles (e.g. State responsibility and liability) and existence of guidelines and principles that are not purely legal
- **No “one-size-fits-all” approach**
- **space law education and capacity-building must be HOLISTIC in its conception, approach, perspective and delivery**

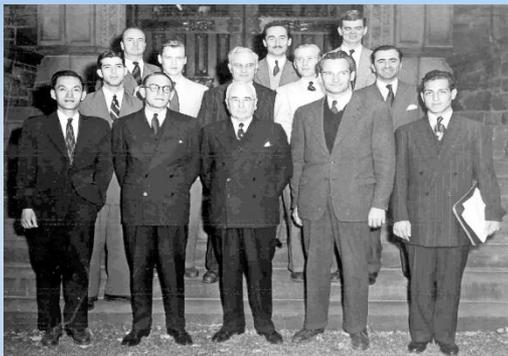
“Capacity-building in space law and policy are unmissable elements in this drive to strengthen overall capacity and training to ensuring the integration and sustainability of space applications and technology as a driver of national and global development”.

Ram Jakhu and Kuan Wei Chen, *Education Curricula for Space Law Capacity-Building: Lessons from the McGill Model* (2017)

# UN recommendations for a space law curricula

“[university programmes and curricula in space law] should consider an **interdisciplinary approach** and employ all possible avenues of **international cooperation**, including exchange programmes [...], **joint-research programmes, scholarships, internships and international moot court competitions**”.

*Recommendations from the UNOOSA Space Law Workshop 2002*



Institute of Air & Space Law - 1951-1952



VIDEOS



# UN recommendations for a space law curricula

**“Educational programmes in space law could be developed in response to long-term needs.**

**[...] university programmes and curricula in space law take into account international treaties related to space activities as well as developments such as the enactment of national space laws and the increasing privatization and commercialization of space activities”.**

*Recommendations from the UNOOSA Space Law Workshop 2002*

**“capacity-building, training and education in space law and space policy [are] of paramount importance in further developing the practical aspects of space science and technology and increasing knowledge of the legal framework within which space activities were carried out”.**

*UN Report on “Contribution of space law and policy to space governance and space security in the twenty-first century” (2016)*

# The UN Space Law Curriculum

UNITED NATIONS OFFICE FOR OUTER SPACE AFFAIRS

## Education Curriculum on Space Law

“Knowledge of the legal framework for these technologies provides a deeper understanding of the roles that space, technology and law play in an increasingly interdependent world. Raising awareness and building regional capacity in the knowledge and application of space law furthers orderly international development and cooperation”.

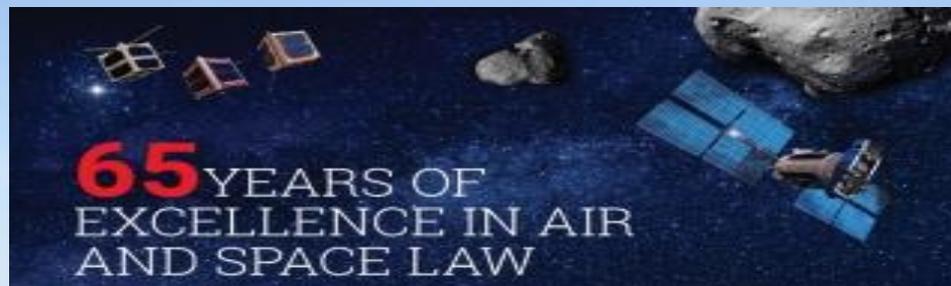
- Lack dedicated modules on:
- space security and sustainability issues
  - national space legislation
  - Privatisation of space activities (and regulation thereof)
- Should be more:
- Comparative
  - Holistic!

Table 1. Schematic overview of the space law curriculum

	Module 1 Basic concepts of international law and space law	Module 2 Remote sensing/GIS, satellite meteorology and global climate + international law	Module 3 Satellite communications + international law	Module 4 Global navigation satellite systems (GNSS) + international law
Class 1	Introduction to International law	International law relating to remote sensing	Overview of international law on satellite communications	International institutional context for GNSS operations
Class 2	The Outer Space Treaty and the fundamental principles of space law	National legislation for remote sensing	Overview of international law on satellite communications	GNSS providers and GNSS augmentation
Class 3	Other space treaties and General Assembly resolutions	Regional and global agreements on remote sensing	Technical standards and national licensing	GNSS users
Class 4	National regulations, commercialization and privatization	Bilateral and multilateral agreements on remote sensing	International trade in satellite communication services and global mobile personal communication services	Legal framework for GNSS services
Class 5	Multilateral and bilateral agreements and intergovernmental organizations	Sources of remote sensing data	Satellite broadcasting	GNSS services, uses and current problems
Duration	2 weeks/12 hours	2 weeks/10 hours	2 weeks/11 hours	2 weeks/10 hours



# The McGill Model of Education Curriculum for Space Law Capacity-Building



# Steeped in tradition yet forward-looking

“For more than 150 years, McGill's Faculty of Law has been developing legal minds equally at ease with the intellectual rigors of academia and the practical realities of the legal profession”



“By work, all things increase and grow”

Due to its unique geographic location, legal education at McGill:

- **Is bilingual and bijural** (common law and civil law systems)
- **Takes a comparative and international approach** to the study of law
- **Encourages interdisciplinary perspectives and dialogue**



“McGill University’s Institute of Air and Space Law, through its accomplishments in teaching, research and publication has established itself as a **center of excellence in the field of international law**”.

*Edward Warner Award conferred in 1996*



# Unique Approach to Legal Education



McGill

Institute of  
Air and Space Law

Institut de  
droit aérien et spatial

*We strive consistently to:*

educate

the next generation of air and space lawyers to serve the needs of the air and space community worldwide.

offer

our students the best graduate education in air law and space law available anywhere in the world.

publish

interdisciplinary research valuable to governmental and multinational institutions, the airline and aerospace industries, and the legal profession.

serve

the professional educational needs of the aviation and space law bar.

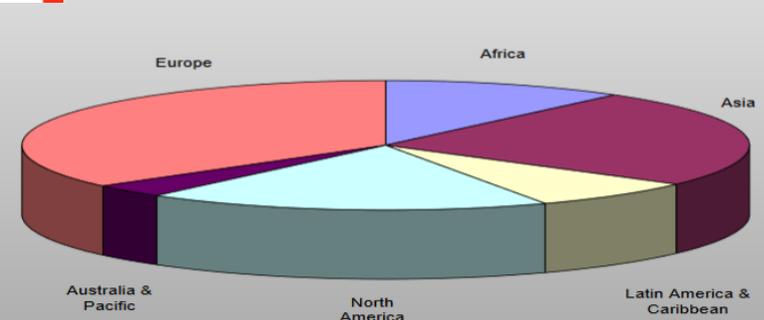
create

a thriving intellectual environment and professional global network for our faculty, our students, our graduates, and experts in the field.

- **Established in 1951**, the Institute of Air & Space Law (IASL) provides graduate legal education for students from around the world.

- **The IASL has educated more than 1000 students, who today occupy positions in some of the most senior positions in law firms, corporations, governmental and intergovernmental institutions in more than 120 countries around the world.**

McGill Institute of Air & Space Law Graduates Worldwide



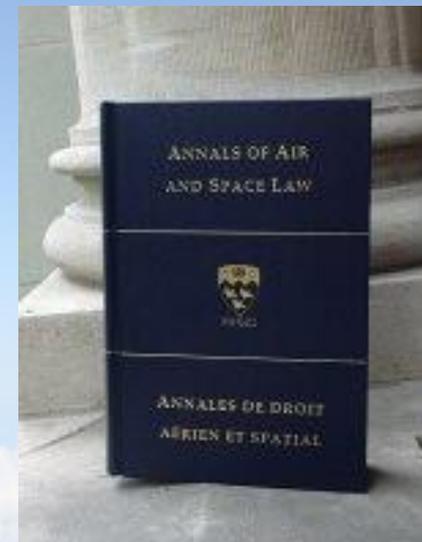
- International
- Interdisciplinary
- Interactive
- Comparative / trans-systemic

- Involvement in the work of Centre for Research in Air and Space Law, the Institute's research arm.
  - *Global Space Governance Study* (2014-2017); the project to draft the *McGill Manual on International Law Applicable to Military Uses of Outer Space* (McGill Manual); and the *Space Security Index*.
- The opportunity to take part in space law-related conferences, workshops and events
- Participation in moot court competitions (e.g. Manfred Lachs Space Law Competition)
- Internship opportunities
- Joint-research and collaboration with other institutions
  - University of Adelaide, University of Exeter, Xi'an Jiaotong University, UNOOSA, APSCO etc.



# Various scholarships to stimulate interest and studies in space law

- Erin J.C. Arsenault Fellowships in Space Governance for the pursuit of studies in peace and security in outer space through law, policy and global governance.
- Professor Masao Sekiguchi Fellowships
- Nicolas Matesco Matte Fellowships and Award
- Setsuko Ushioda-Aoki Prize
- George S. and Ann K. Robinson Space Price
- Professor Paul S. Dempsey Fellowships



*Between 2004 and 2017, the McGill Institute received financial support for space law research and fellowships to the amount of approximately US\$ 6 million.*

# McGill Alumni Network (McGill Family)

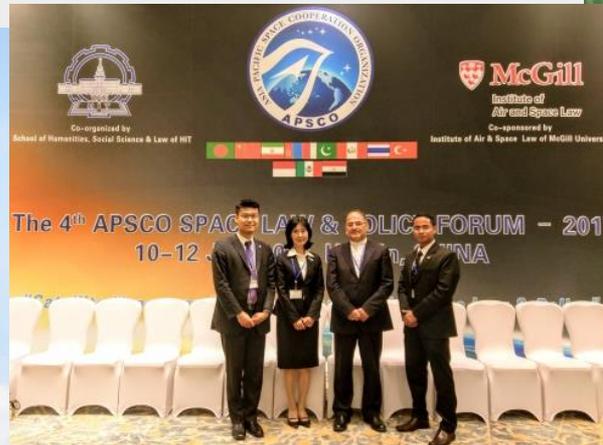


Dr. Olumuyiwa Benard Aliu of Nigeria.

“One of the unique assets of the Institute has been its international network of illustrious alumni base, who serve as a constant source of inspiration and guidance for the students”.



- **Institute of Air and Space Law Association** (*anno 1954*)
  - Asia Pacific Alumni(ae) Association
  - European Alumni(ae) Association
  - Latin American Alumni(ae) Association
  - North American Alumni(ae) Association
- **McGill Air & Space Society**



# Evolution of the McGill Space Law Curriculum



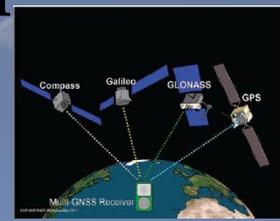
Launch of Sputnik: *space age begins!*



Adoption of the Outer Space Treaty and other UN space law treaties

**Advent of space applications:**

- Direct broadcasting
- Remote sensing
- GNSS
- Telecommunications



**Advent of national space legislation and policies,** and increased government regulation of space activities



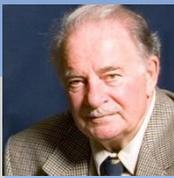
Founding of the Institute of Air Law

1957



Renaming to the

1967  
Launch of:  
*- Space Law*



Prof. Ivan Vlasic

1985  
Launch of:  
*- Space Law Institutions*  
*- Space Law Applications*



Prof. Peter Haanappel



Prof. Ram Jakhu



1999/2000  
Launch of:  
*- Space Law: General Principles*  
*- Law of Space Applications*  
*- Government (national) Regulation of Space Activities*

# Space Law Courses at McGill

First semester



## *Space Law: General Principles*

- **examine the role of international law in the regulation of outer space activities**
- *E.g.* current and potential future uses of outer space; the law-making process relating to space activities and the international institutions that are involved in this process; the legal regime of outer space and celestial bodies including the exploitation of space natural resources; the legal status of spacecraft including their registration; liability for damage caused by space activities; assistance to astronauts and spacecraft in distress; legal controls governing activities harmful to the environment and to peaceful uses of outer space; settlement of space-related disputes

## *Law of Space Applications*

- **examine international legal aspects of various space applications.**
- *E.g.* international law related to satellite telecommunications (including satellite broadcasting) and the role therein of various international organizations; remote sensing by satellites; space stations; space travel; navigational services by satellites; military uses of outer space; space-based solar power; and international space technology transfers and international trade in space products and services, etc.

# Space Law Courses at McGill

## Second semester

### *Government (national) Regulation of Space Activities*

- national public and private laws and regulatory regimes of some spacefaring nations governing space activities, particularly carried out by private entities
- *E.g. rationale for government regulation; licensing requirements for launch activities; competition in domestic and international satellite telecommunication services and launch services; human space travel; intellectual property rights under domestic laws; national export controls on space products etc.*



# Success of the McGill Model

- The success of the McGill Model can be seen from the fact the McGill remains the world's leader in this field;
- A unique blend and emphasis on the interdisciplinary and comparative approach to the studying space law a decade before the UN Education Curriculum on Space Law;
- A mature curriculum consisting of three graduate-level courses covering a variety of current issues and evolving topics.
- Interactive pedagogy and practical experiences to train skills and knowledge
- Attracted funding for scholarships to support students and professionals in their studies



**“[encourage] closer cooperation and dialogue between universities and institutions with established space law programmes and those educational institutions wishing to develop such programmes”**

*“Contribution of space law and policy to space governance and space security in the twenty-first century” (2016)*

# Recommendations and Conclusions

- The McGill Model of education in space law is worthy of attention and use
  - The **contents of the educational curriculum** for space law should cover international and national (and to some extent foreign) law aspects of space law;
  - The **curriculum should be custom-made for each country**, incorporating some well-tested pedagogical goals and relevant subjects. One system does not suit all;
  - The **curriculum should be educational** (rather than purely academic), **interdisciplinary**, and **cross-sectoral in nature and scope**, with input from experts and practitioners that are involved in various space applications;
  - **International partnerships for capacity-building** and institutional support should be pursued in the development and delivery of space law curriculum.
  - The UN Regional Centers for capacity-building in space law are excellent institutions for offering space law courses, but they should follow the McGill Model in this regard; and
- **Special attention and resources dedicated to promoting capacity-building, particularly in developing countries and for the participation of women in space law education**

