



The Origins Institute

The Origins Institute (OI) at McMaster University is a transdisciplinary academy dedicated to research, education, and outreach through 6 origins themes:

- space-time
- elements
- structure in the cosmos
- life
- species and biodiversity
- humanity

The Three Pillars

Research – conferences and workshops; colloquia; visiting-fellow, postdoctoral-researcher, and undergraduate-training programs. The OI has identified astrobiology as its prime research directive and, relating to this, has held a major international meeting and workshop, hosted many talks and visitors, and trained many researchers.

Education – an undergraduate curriculum including the Origins Research Specialization and a Minor in Origins Research; our students interact closely with our visiting colloquium speakers and public lecturers. The specialization or minor may be taken in conjunction with almost any honours science program at McMaster University. Details are provided in the chart on the other side.

Outreach – a public lecture series and 3D theatre program. The OI offers an award-winning, free lecture series and innovative 3D theatre program that has attracted interest from the local community.

Members and Partner Institutions

OI members comprise more than 40 faculty members from departments across the Faculties of Science, Health Sciences, Social Sciences, and Humanities.

The OI collaborates with groups at universities, institutes, and academies across Canada and internationally.

OI Advisory Council members are world-leading scientists, including Sir Martin Rees (Cambridge University) and David Deamer (University of California Santa Cruz).

Facilities

OI researchers use state-of-the-art High Performance Computing facilities offered by SHARCNET (Shared Hierarchical Academic Research Computing Network); receive support from the Research and High Performance Computation Support group at McMaster University; partake in groundbreaking genomics research carried out at the McMaster University Centre for Environmental Genomics and Biotechnology as well as the Centre for Antimicrobial Research.

Operation and Highlights

OI operations began on July 1, 2004 with Dr. Ralph E. Pudritz, Department of Physics and Astronomy, as its founding Director and Dr. Jonathon R. Stone, Department of Biology, as the first Associate Director.

- hosted the first international astrobiology conference and workshop in Canada, entitled Astrobiology and the Origins of Life (2005 May); other major international conferences that have been hosted include Origins of Dark Energy (co-sponsored by the Perimeter Institute, 2007 May) and Darwin's Legacy: Natural Selection as an Organising Principle in Science (2009 May)
- launched the OI Colloquium Series and Visiting-Fellow Program (2004-2005), which has brought to McMaster University more than 100 distinguished researchers
- started the Origins Research Specialization (2005-2006), for which ORIGINS courses have provided many students, within and without the specialization, with a unique origins-based learning experience, including the popular, 400+ student Big Questions course
- plans to offer a graduate program in astrobiology, the first in Canada (2011)
- initiated the OI Public Lecture Series (2003-2004), which since has filled the largest lecture halls at McMaster University more than 30 times with audiences engaged by the greatest scientists on the planet, including Sydney Brenner (Nobel Laureate)
- opened the OI 3D Theatre (2005), to provide an effective outreach and educational tool for the institute, showing the movie *Our Sun: What a Star*

Through your participation in our activities, the OI will influence profoundly how you conceive the universe and the physical and living systems within it.



Contact information

To view additional information about the OI and its activities, please surf to <http://origins.mcmaster.ca>.

Origins Institute
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Latest Activities

OI Astrobiology Program

The OI is considered among Canada's leading centres in the exciting emerging field astrobiology. The OI participates in a major partnership, along with McGill University, McMaster University, the University of Toronto, and the University of Western Ontario, that is running a 6-year NSERC CREATE program to train more than 70 undergraduate and graduate students and postdoctoral researchers between 2009 and 2015.

OI Postdoctoral Researchers

The OI offers postdoctoral researcher positions in astrobiology and other fields and intends to develop this area into the future.

What's in it For You

OI students benefit from having both honours degree, implying ready access to graduate schools, as well as a broad interdisciplinary education making it possible for them to do work in the growing number of research fields (eg. astrobiology) and jobs outside academia (eg. health sciences sectors) that require this kind of background. OI students continue onto grad and medical schools to further their education.

Level II Programs	Admission Requirements	Admission Notes
Minor in Origins Research	24 units total 6 units from ARTS&SCI 1D06, ASTRON 1F03, BIOLOGY 1A03, 1M03 (or 1AA3), CHEM 1A03, 1AA3, ENVIR SC 1G03, iSCI 1A24, MATH 1A03, 1AA3, 1B03, 1LS3, 1X03, 1XX3, PHYSICS 1B03, 1BA3, 1BB3, 1F03 6 units from ORIGINS 2B03, 2FF3, 2LU3 3 units from ORIGINS 2S03, 3SS3 9 units from ORIGINS 3A03, 3B03, 3C03, 3D03, 3E03, 3F03	
Origins Research Specialization Completion of ASTRON 1F03 (or PHYSICS 1F03) is recommended strongly.	<p>Enrolment in this specialization is limited. Selection is based on academic achievement and requires completing admission requirements for an appropriate Honours program (see note at left) and completing at least the following courses:</p> 3 units from MATH 1A03, 1LS3 3 units from PHYSICS 1B03, 1L03 3 units CHEM 1A03 Additionally, the following courses must be completed before entering Level III: 3 units from BIOLOGY 1A03, 1M03 (or 1AA3); completion is strongly recommended in Level I 3 units from MATH 1AA3, 1B03, PSYCH 2RA3, STATS 2B03, 2D03 3 units from ASTRON 1F03, PHYSICS 1B03, 1BA3, 1BB3, 1F03 (see note at left.) 3 units from CHEM 1AA3, ENVIR SC 1G03 <p>Course List ORIGINS 3A03, 3B03, 3C03, 3D03, 3E03, 3F03</p> <p>Requirements 27 units total (Levels II to IV) 6 units from ORIGINS 2B03, 2FF3, 2LU3 (see Admission Note 3) 3 units from ORIGINS 2S03, 3SS3 (see Admission Note 3) 6 units from Origins Course List 3 units from ORIGINS 3S03, 4SR3 9 units ORIGINS 4A09 (see Admission Note 5)</p>	<ol style="list-style-type: none"> Information about the specialization may be accessed at the Origins Institute Internet site (http://origins.mcmaster.ca/) or by contacting the Associate Director (Jon Stone, at origins@mcmaster.ca). Students must apply for their Level II honours program with the Origins Research Specialization using the Application for Admission to Level II on SOLAR (Student On-line Academic Registration). Please refer to Admission to Level II Programs in the Undergraduate Calendar. Students must refer to the description for the Honours program that they seek to combine with the Origins Research Specialization for specific admission and program requirements. ORIGINS 2B03, 2FF3 (or 2LU3) and 2S03 (or 3SS3) must be completed before entering Level IV. Students must satisfy all requirements for an appropriate Honours program and the Origins Research Specialization. Unless specific program requirements are stated in the Undergraduate Calendar, students should consult with program administrators and the Associate Director for the Origins Institute to devise a curriculum. Effective 2012-2013, students who fail to meet the prerequisite for ORIGINS 4A09 will be prohibited from continuing in the Origins Research Specialization; however, if requirements have been met, these students may apply to graduate with a Minor in Origins Research.

