



THEMATIC PROGRAMS

May 18, 2012

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January-August 2012
Thematic Program on Inverse Problems and Imaging
at the Fields Institute, Toronto

Organizers:

Tony Chan (Hong Kong University of Science and Technology), Charles Epstein (Pennsylvania),
 Allan Greenleaf (Rochester), Yaroslav Kurylev (University College London),
 Jan Modersitzki (Lübeck), Adrian Nachman (Toronto),
 Gunther Uhlmann (Washington), Luminita Vese (UCLA)

NSERC
CRSNG

Ontario

**Registration open****Application for travel support to Program**

Application for travel support to the July 3-31, 2012 Summer Research School on the Mathematics of Medical Imaging

Application for travel support to Aug 20-24, 2012 Industrial Problem-Solving Workshop on Medical Imaging

Confirmed Participants

April 30 – May 31, 2012 Theme Period on Variational Methods and Compressive Sensing in Imaging

July–August 2012 Theme Period on the Mathematics of Medical Imaging

Hotels and Housing**Visitor Information**

Mailing List : To receive updates on the program please subscribe to our mailing list at www.fields.utoronto.ca/maillist

Outline of Scientific Activities ([program poster](#))

The proposed program will take place in conjunction with the [Mitacs Focus Period on the Mathematics of Medical Imaging \(FP-MMI\)](#). A Mitacs International Focus Period consists of a series of scientific events on diverse topics - all centered on a common theme that addresses key socio-economic issues of high provincial and federal priority. June 2011 to August 2012 is the MITACS International Focus Period on The Mathematics of Medical Imaging.

The Fields Thematic Program on Inverse Problems and Imaging aims to focus in depth on selected active areas of recent mathematical research in Inverse Problems and Image Analysis. There will be emphasis on longer events that encourage collaborations on important new directions of investigation. The main components will be:

1. A month-long program on Geometry in Inverse Problems.
2. A month-long program on Variational Methods and Compressive Sensing in Imaging
3. A two-month Summer Thematic Program on "Mathematics of Medical Imaging."

January 9– April 6, 2012
Graduate Courses

1. *Mathematics of Medical Imaging*

Tuesdays and Thursdays 1:30-3:00, Room 230, Fields Institute
 Instructor: **Adrian Nachman**, University of Toronto

2. *Inverse Transport Theory and Tomography*

Tuesdays and Thursdays 3:30-5:00, Stewart Library, Fields Institute
 Instructor: **Alex Tamasan**, University of Central Florida

March 26 – April 27, 2012**Theme Period on Geometry in Inverse Problems**

Organizers:

Yaroslav Kurylev, University College London

Adrian Nachman, University of Toronto

April 30 – May 31, 2012**Theme Period on Variational Methods and Compressive Sensing in Imaging**

Organizers:

Tony Chan, Hong Kong University of Science and Technology

Adrian Nachman, University of Toronto

Luminia Vese, UCLA

Distinguished Lecture Series**May 7- 9, 2012****Emmanuel Candes**, Professor of Mathematics and of Statistics, Professor of Electrical Engineering (by courtesy), Stanford University**July–August 2012****Summer Theme Period on the Mathematics of Medical Imaging****Organizers:**Charles Epstein, University of
PennsylvaniaAllan Greenleaf, University of
Rochester

Jan Modersitzki, University of Lübeck

Adrian Nachman, University of Toronto

Gunther Uhlmann, University of
Washington

Hongmei Zhu, York University

**Applications for support to the July 3-31, 2012 Summer Research
School on the Mathematics of Medical Imaging****Applicants:****1) please fill out the funding application here****2) have your advisor submit a letter of recommendation to
thematic<at>fields.utoronto.ca****3) send us your CV and include your thesis subject and current projects
to thematic<at>fields.utoronto.ca**

A number of students/fellows will be awarded support to stay for July 2- August 24 to continue work on their research projects and participate in all the Summer's activities. Please indicate on the application form if you wish to be considered for support for an extended stay July 2-August 24. The extended activities include:

July 3-31, 2012 Summer Research School on the Mathematics of Medical Imaging

August 13-17, 2012 Workshop on Microlocal Methods in Medical Imaging

August 20-24, 2012 Industrial Problem-Solving Workshop on Medical Imaging

Coxeter Lecture Series

to be announced

July 3-31, 2012**Summer Research School on the Mathematics of Medical Imaging****August 13-17, 2012****Workshop on Microlocal Methods in Medical Imaging****August 20-24, 2012****Industrial Problem-Solving Workshop on Medical Imaging**

Postdoctoral Fellows

The Thematic Program on Inverse Problems and Imaging is pleased to welcome the following Postdoctoral Fellows to the Program:

Fields Ontario Postdoctoral Fellows

Prashant Athavale, PhD (University of Maryland, College Park, 2009)

Program Visitors

We will support a number of visitors to the program, including visiting Ph.D. students

All scientific events are open to the mathematical sciences community. Visitors who are interested in **office space or funding** are requested to apply by filling out the **application form (open shortly)**. Fields scientific programs are devoted to research in the mathematical sciences, and enhanced graduate and post-doctoral training opportunities. Part of the mandate of the Institute is to broaden and enlarge the community, and to encourage the participation of women and members of visible minority groups in our scientific programs.

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