À vos calendriers : 7 au 11 juin, 2010
Congrès de l'ACP, Université de Toronto

Conférencier Herzberg: Dr. Charles H. Townes,
University of California (Berkeley)
"50ième anniversaire du laser".

Conférenciers pléniers confirmés:

Rob McPherson (TRIUMF)
"Probing the Origin of Mass: The First Light of LHC Data"

Ken Tapping (NRC Herzberg Institute of Astrophysics)
"The Changing Rhythm of Solar Activity"

Robert Mann (CAP President)
"Progress and Prospects for the CAP"

L'ACP s'est associée avec l'APS et l'OSA pour honorer le cinquantième anniversaire du laser (LaserFest). Il y aura plusieurs sessions au congrès liées au laser et à la recherche en optique au Canada.

Pour des mises à jour et des renseignements sur le programme, visitez:
http://www.cap.ca/fr/congres/2010

PROCHAINS CONGRÈS DE L'ACP

Congrès annuel 2011, 13 - 17 juin, 2011
Université Memorial de Terre-Neuve, Saint John's, NL

Congrès annuel 2012, (dates provisoires) 4 - 8 juin, 2012
Université de Calgary, Calgary, AB

Mark your calendars: June 7 – 11, 2010
CAP Congress, University of Toronto

Herberg Public Lecturer: Dr. Charles H. Townes,
University of California (Berkeley)
"50th Anniversary of the Laser"

Confirmed Plenary Speakers: Rob McPherson (TRIUMF)
"Probing the Origin of Mass: The First Light of LHC Data"
Ken Tapping (NRC Herzberg Institute of Astrophysics)
"The Changing Rhythm of Solar Activity"
Robert Mann (CAP President)
"Progress and Prospects for the CAP"

CAP has partnered with the APS and OSA to honour the 50th anniversary of the laser through LaserFest. There will be several sessions at the Congress related to laser and optics research in Canada.

For updates and program information, bookmark the Congress web site at:
http://www.cap.ca/en/congress/2010

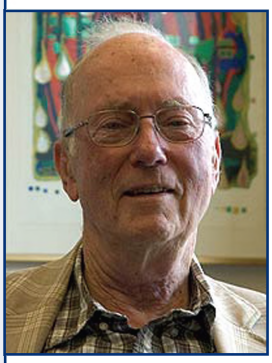
FUTURE CAP CONFERENCES

2011 Annual Congress, June 13 - 17, 2011
Memorial University of Newfoundland, Saint John's, NL

2012 Annual Congress, (tentative) June 4 - 8, 2012
University of Calgary, Calgary, AB

CONFÉRENCE COMMÉMORATIVE PUBLIQUE HERZBERG 2010

UNIVERSITÉ DE TORONTO
LUNDI, 7 JUIN 2010 - 19H00



Charles Townes
Université de la Californie à Berkeley

50e ANNIVERSAIRE DU LASER

Au début des années 50, j'ai réfléchi et je me suis employé à trouver un moyen de me procurer un oscillateur à fréquences plus élevées que celles des appareils électroniques connus afin de faire de la spectroscopie à très haute résolution. Finalement, j'ai tout à coup eu l'idée de porter suffisamment d'atomes ou de molécules excédentaires à un état supérieur et de produire une émission stimulée. Mon étudiant Jim Gordon et moi-même avons d'abord ouvré dans la gamme des micro-ondes, essentiellement à titre de test, créant ainsi le maser (amplification d'hyperfréquences par émission stimulée de radiations), qui a donné un domaine excitant dans lequel beaucoup se sont lancés pour fabriquer des oscillateurs et des amplificateurs de micro-ondes. Mais après quelques années, j'ai moi-même prôné l'adoption de longueurs d'onde beaucoup plus courtes. Arthur Schawlow et moi avons alors rédigé une communication sur la production de ces oscillateurs à émission stimulée à des longueurs d'onde aussi courtes que celles de la lumière – appelés par nous masers optiques, mais vite rebaptisés lasers (amplification de la lumière par émission stimulée de radiations). La publication de nos propos théoriques a passionné nombre de scientifiques et c'est Theodore Maiman qui a fabriqué le premier système opérationnel, un laser à rubis pulsé, aux laboratoires Hughes. Le premier système à oscillation entretenue est l'ouvre de l'un de mes anciens étudiants, Ali Javan, avec Wm. Bennett et Don Herriot, à Bell Telephone Laboratories. L'industrie avait alors reconnu l'importance de ce domaine et les premiers lasers ont tous été construits dans des laboratoires industriels. Les lasers sont maintenant un domaine de science fantastique et servent à une grande variété d'applications techniques – qui sont toutes des extensions naturelles de la spectroscopie, domaine qui a connu un grand essor grâce à Herzberg notamment.

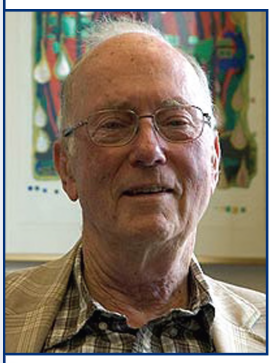
J'utilise actuellement le laser pour faire de l'interférométrie infrarouge sur les étoiles à l'aide de trois télescopes distincts. Les lasers ont aidé l'astronomie de bien des façons, produisant notamment un essor rapide de l'interférométrie dans la mesure de la taille et des formes d'étoiles. Notre interféromètre est cependant le seul à utiliser la détection hétérodyne, fournie par des oscillateurs locaux à laser, permettant ainsi l'interférométrie dans des bandes très étroites qui peuvent éviter les raies spectrales causées par les gaz environnants. Cela permet de mesurer assez directement les étoiles anciennes et actives sans interférence des gaz qu'elles émettent. Je ferai état de certaines de ces mesures, montrant les changements de taille de certaines étoiles, les enveloppes de poussières dont elles se débarrassent et leur expansion, ainsi que d'autres détails inconnus jusqu'à ce que ces techniques soient rendues possibles.

NOTICE BIOGRAPHIQUE

Charles Hard Townes est né à Greenville, en Caroline du Sud, où il se voit décerner un B.Sc. en physique et un B.A. en langues modernes par l'Université Furman. Il fait sa maîtrise ès arts en physique à l'Université Duke, puis son doctorat au California Institute of Technology. Il fait partie du personnel technique de Bell Telephone Laboratories de 1933 à 1947. À la suite de sa nomination à l'Université Columbia en 1948, il poursuit ses recherches sur les micro-ondes en étudiant la structure des atomes, des molécules et des noyaux. En 1951, le Dr Townes conçoit l'idée du maser et, début 1954, il réalise dans l'ammoniac la première amplification et génération d'ondes électromagnétiques par émission stimulée. En 1958, le Dr Townes et son beau-frère, le Dr A.L. Schawlow, démontrent théoriquement que le maser peut fonctionner dans la partie optique et infrarouge du spectre. La démonstration du premier laser opérationnel est faite (par Ted Maiman) en 1960. De 1959 à 1961, le Dr Townes est vice-président et directeur de la recherche à l'Institute for Defense Analyses à Washington, D.C., à titre de conseiller du gouvernement américain. En 1961, il est nommé vice-recteur à l'enseignement et à la recherche et professeur de physique au Massachusetts Institute of Technology, puis professeur à l'Université de la Californie en 1967, principalement au campus Berkeley. Le principe du maser/laser lui vaut (ainsi qu'aux Drs Basov et Prokhoroff) le prix Nobel de physique en 1964. Le Dr Townes siège à divers comités scientifiques conseillers d'organismes gouvernementaux et il est actif au sein de sociétés professionnelles. Il est ainsi membre et vice-président du comité consultatif des sciences du Président des États-Unis et président du comité consultatif sur le premier atterrissage de l'homme sur la Lune. Il siège aussi au conseil d'administration des sociétés General Motors et Perkins Elmer.

2010 HERZBERG MEMORIAL PUBLIC LECTURE

UNIVERSITY OF TORONTO
MONDAY, 7 JUNE 2010 - 19H30



Charles Townes
University of California at Berkeley

50TH ANNIVERSARY OF THE LASER

In the early 1950s I thought and worked hard at trying to find a way to obtain an oscillator for frequencies higher than those available from known electronics, in order to do very high resolution spectroscopy. Finally, I suddenly had the idea to put enough excess atoms or molecules in an upper state, and provide stimulated emission. My student Jim Gordon and I made this work first in the microwave range, primarily as a test. The resulting maser (for microwave amplification by simulated emission of radiation) generated an exciting field and many people jumped into it to make microwave oscillators and amplifiers. But after a few years I pushed myself to move on to much shorter wavelengths. Arthur Schawlow and I then wrote a paper on how such stimulated emission oscillators could be produced at wavelengths as short as those of light – we called it an optical maser, but it soon was renamed the laser (light amplification by stimulated emission of radiation). After publication of our theoretical discussion, many scientists were excited and the first working system was made by Theodore Maiman at the Hughes Labs, a pulsed ruby laser. The first continuously oscillation system was made by one of my former students, Ali Javan, with Wm. Bennett and Don Herriot at the Bell Telephone Labs. Industry by then recognized the importance of this field, and all the first lasers were built in industrial labs. Lasers are now a wonderful field for science and for a wide variety of technical applications -- all an outgrowth of spectroscopy, a field Herzberg helped develop importantly.

I presently use lasers to do infrared interferometry on stars with three separate telescopes. Lasers have helped astronomy in many ways, in particular producing a rapid growth of interferometry for measurement of stellar sizes and shapes. Our interferometer is the only one, however, which uses heterodyne detection, provided by laser local oscillators, which hence allows interferometry in very narrow bandwidths which can avoid spectral lines due to surrounding gas. This allows measurement of old and active stars quite directly, without interference from their emitted gases. I will report some of the measurements, showing the changes in size of some stars, the dust shells they have blown off and expansion of these shells, along with other details not seen until such techniques became possible.

BIOGRAPHY

Charles Hard Townes was born in Greenville, South Carolina and attended Furman University in Greenville, from which he received a B.Sc. in Physics and a B.A. in Modern Languages. He completed the Master of Arts degree in Physics at Duke University and then took his Ph.D. at the California Institute of Technology. He was a member of the technical staff of Bell Telephone Laboratories from 1933 to 1947. Appointed to Columbia University in 1948, he continued microwave research to study the structure of atoms, molecules and nuclei. In 1951, Dr. Townes conceived the idea of the maser and in early 1954, the first amplification and generation of electromagnetic waves by stimulated emission were obtained in ammonia. In 1958, Dr. Townes and his brother-in-law, Dr. A.L. Schawlow, showed theoretically that masers could be made to operate in the optical and infrared region. The first working laser was demonstrated (by Ted Maiman) in 1960. From 1959 to 1961, Dr. Townes served as Vice President and Director of Research of the Institute for Defense Analyses in Washington, D.C., advising the U.S. government. In 1961, Dr. Townes was appointed Provost and Professor of Physics at the Massachusetts Institute of Technology. He was appointed University Professor at the University of California in 1967, principally located at the Berkeley campus. He was co-recipient (with Drs. Basov and Prokhoroff) of the 1964 Nobel Prize in physics for the maser/laser principle. Dr. Townes has served on a number of scientific committees advising governmental agencies and has been active in professional societies. This includes being a member, and vice chairman, of the Science Advisory Committee to the President of the U.S. and Chairman of the Advisory Committee for the first human landing on the moon. He also served on the boards of General Motors and of the Perkins Elmer Corporations.

PLENARY SPEAKERS - CONFÉRENCIERS PLÉNIÈRES

Robert McPherson,
TRIUMF

Probing the Origin of Mass: the First Light of LHC Data

Four decades of experimental results and theoretical developments point us to energies of one trillion electron volts, or about a thousand times the mass of the proton, to search for the processes that give mass to elementary particles. Reaching such high energies required a new particle accelerator, the Large Hadron Collider (LHC), which has recently begun operation at the CERN laboratory in Geneva, Switzerland. The physics case for the LHC and the massive ATLAS detector which records the results of the interactions that might produce the Higgs boson or other new particles is discussed, and an LHC status report including a first look at ATLAS data from the ongoing 2010 run is presented.

Biography:

Robert McPherson is a professor at the University of Victoria and a Principal Research Scientist at the Institute of Particle Physics. He completed his PhD at Princeton University studying rare decays of kaons, and then moved to the CERN laboratory to work on the Large Electron Positron Collider where he served as overall physics coordinator of the OPAL experiment. He has been working on the ATLAS experiment at the CERN Large Hadron Collider since 2002, leading projects for detector commissioning and data quality measurements needed for robust physics results. He is currently the overall spokesperson and NSERC principal investigator for the approximately 200 Canadians working on ATLAS.

Ken Tapping,
NRC Herzberg Inst.

The Changing Rhythm of Solar Activity

Climate and other environmental change almost certainly have solar-driven components, and our increasing activities in space and dependence on international and global power, transport and communications infrastructure makes us more vulnerable than in the past.The latest generations of satellite-borne instruments for observing the sun are producing unprecedented insights into solar activity. However, when we consider the solar activity cycle and longer-term trends in solar behaviour, we are confronted with two serious problems. Firstly, until we have observed a few solar activity cycles, we won't have the context we need. Secondly, we have yet to derive the tools needed to extract from these data the key parameters applicable to longer term studies. So far, the best stethoscopes we have for looking at the rhythm of solar activity are indices of solar activity such as sunspot number and the 10.7 cm Solar Radio Flux. The first is a record of solar activity since the 17th Century, and the second record began in 1947. Since then, additional indices have come into use. Although it would be unwise to treat any single quantity as a full descriptor of the level of solar activity, we can use these long, consistent time-series to gain insight into how the solar activity cycle works. In this presentation I will discuss work on using indices to examine the solar activity cycle, with special attention to the last solar minimum, which was unusually long. We will examine some of the underlying physics and summarize our plans for the future solar monitoring in Canada.

Biography:

Robert McPherson is a professor at the University of Victoria and a Principal Research Scientist at the Institute of Particle Physics. He completed his PhD at Princeton University studying rare decays of kaons, and then moved to the CERN laboratory to work on the Large Electron Positron Collider where he served as overall physics coordinator of the OPAL experiment. He has been working on the ATLAS experiment at the CERN Large Hadron Collider since 2002, leading projects for detector commissioning and data quality measurements needed for robust physics results. He is currently the overall spokesperson and NSERC principal investigator for the approximately 200 Canadians working on ATLAS.

Robert Mann,
CAP President

Progress and Prospects for the CAP

This talk will review the main activities of the CAP over the past year and discuss its future directions and projects. Highlights include advancement of science policy, government lobbying efforts, Canada's nuclear program, impact of changes in NSERC's Discovery Grant program, and changes in membership structure.

Biography:

Robert Mann is a professor at the University of Waterloo. He is currently President of the Canadian Association of Physicists.

SPECIAL SESSIONS / SESSIONS SPÉCIALES

IDEAS TO INNOVATION / *LES IDÉES À L'INNOVATION*

DUTCHER, John, U. of Guelph
Polysaccharide Nanoparticles: from Discovery to Commercialization
REID, Matthew, UNBC
The Sometimes Bumpy Road to Commercialization at a Small Northern University
WHITEHEAD, Lorne, UBC
Practical Spin-offs: Let's Worry Less and Innovate More

NON-ACADEMIC CAREER PATHS / *DES CARRIÈRES NON-ACADÉMIQUE*

HANKEVYCH, Vasyl, Royal Bank
Physicists in Finance: Where Do They Fit and How to Get There?
LASIUK, Brian, GE Health
to be announced / à venir
STOCK, Rene, Scotia Capital, Scotiabank Toronto
to be announced / à venir
TREMBLAY, Real, Yahoo
to be announced / à venir

MEDICAL ISOTOPES - CANADA'S ROLE / LES ISOTOPES MÉDICAL - LE RÔLE DU CANADA

ROSS, Carl, NRC
Using the Mo-100 Photoneutron Reaction to Meet Canada's Requirement for Tc-99m
RUTH, Tom, TRIUMF
Direct production of Tc-99m via cyclotron irradiation of Mo-100: A piece of the puzzle
RYAN, Dominic, McGill University
Replacing NRU - It is about more than medical isotopes

INVITED SPEAKERS / CONFÉRENCIERS INVITÉS

BACCA, S. (DNP / DPN)
TRIUMF
Recent advances in the Theory of Neutron-rich Systems
(Nuclear Structure)

BACHYNSKI, Morrel (DOP-DHP)
w/ W. Clemens, MPB Technologies
The Role of Lasers through MPB's 30 Plus Year Adventure
(History of the Laser in Canada)

BAGGER, Jonathan (PPD)
John Hopkins U.
tobe announced / à venir (ILC)
(Energy Frontier and Future Colliders)

BANDRAUK, Andre (DAMPhi-DOP-DPP / DPAMip-DOP-DPP)
U. Sherbrooke
Effect of Nuclear Motion on Attosecond Electron Transfer - The Molecular Cat
(Attosecond Science and High Order Harmonics)

BATCHELAR, Deidre (DMBP / DPMB)
Sunnybrook/U of Toronto
to be announced / à venir
(Medical Physics II)

BEALE, Steven (PPD-DTP / PPD-DPT)
York U.
Highlights from the DO Experiment
(Energy Frontier and Phenomenology)

BEHR, John (PPD-DNP / PPD-DPN)
TRIUMF
Direct and indirect searches for new physics with TRIUMF's neutral atom trap
(Fundamental Symmetries)

BILLINGHURST, Brant (DIMP / DPIM)
Canadian Light Source Inc.
The Far-Infrared Beamline at the Canadian Light Source: Instrumentation, Performance and Coherent Synchrotron Radiation
(Instrumentation at the Canadian Light Source)

BOND, Richard (DTP / DPT)
CITA/U.Toronto
Early and Late Universe Inflation: Cosmic Sports with Lev Kofman
(Gravitation and Cosmology - Lev Kofman memorial session)

BOULAY, Mark (PPD)
Queen's U.
Dark Matter Search at SNOLAB with DEAP-3600
(Dark Matter Searches)

BRYMAN, Doug (DMBP / DPMB)
UBC
Liquid Xenon Detectors for PET
(Medical Physics I)

BURCH, Kenneth (DCMMP / DPMCM)
U. Toronto
Manipulating Spins on Small Scales
(Multiferroics, Spintronics, and Spin Dynamics)

CAMLEY, Robert (DCMMP / DPMCM)
U. Colorado
Noninear Amplification and Mixing of Spin Waves: Experiment and Theory.
(Multiferroics, Spintronics, and Spin Dynamics)

CARSWELL, Allan (DOP-DHP)
Optech Inc.
My Laser Adventure, 1961 to 2010: From a Solution Without a Problem to the Surface of Mars
(History of the Laser in Canada)

CHAN, Hue-Sun (DMBP / DPMB)
U of Toronto

Insights into Principles of Protein Folding from Coarse-Grained Models
(Molecular Biophysics)

CHANG, Zenghu (DAMPhi-DOP-DPP / DPAMip-DOP-DPP)
Kansas State U.
Generalized Double Optical Gating: an attosecond generation method for all
(Attosecond Science and High Order Harmonics)

CHAKRABORTY, Tapash (DCMMP-DTP / DPMCM-DPT)
U. Manitoba
Electronic Compressibility of Graphene: Vanishing correlations and other novelties
(Condensed Matter Theory)

CHARBONNEAU, Paul (DPP-DASP / DPP-DPAE)
U. Montreal
Global 3D MHD Simulations of the Solar Cycle: Progress and prospects
(Plasmas in Laboratory and Astrophysical Environments)

CHEVRIER, Vincent (DCMMP / DPMCM)
MIT
First Principles Studies of Silicon as a Negative Electrode Material for Lithium-ion Batteries
(Best CMMP paper in the Canadian Journal of Physics)

CHOU, Keng (DMBP / DPMB)
UBC
Sub-diffraction-limit Two-photon Fluorescence Microscopy for GFP-tagged cell imaging
(Cellular Biophysics)

CHUPP, T. (PPD-DNP / PPD-DPN)
U. Michigan
Atomic Electric Dipole Moments
(Fundamental Symmetries)

COULOMBE, Sylvain (DPP)
McGill U.
Plasma-Nanostructured Electrode Interactions in discharge lamp applications
(Plasmas at work in material science, medical and industrial applications)

CRAWFORD, Alan (DHP-DOP)
Accurex
Present at the Creation, the Gestation, Birth and Growth of two Companies that Pioneered the Development of Commercial Laser Devices
(History of the Laser in Canada)

CYBURT, Richard (DNP / DPN)
JINA
Nuclear and Particle Physics: Bridging the Divide
(Nuclear Astrophysics)

DAS, Saurya (DTP / DPT)
U. Lethbridge
Aspects of Quantum Gravity Phenomenology
(Gravitation and Cosmology - Lev Kofman memorial session)

DATTA, Alakabha (PPD-DTP / PPD-DPT)
U. Mississippi
Measurements in B decays and New Physics
(Rare Decays and CP Violation)

DEGENSTEIN, Doug (DASP / DPAE)
U. Sask.
OSIRIS on Odin - Year Nine of a Two-Year Mission
(Atmospheric Physics)

de SOUSA, Rogério (DCMMP / DPMCM)
U. Victoria
Electromagnon Excitations in Multiferroics
(Multiferroics, Spintronics, and Spin Dynamics)

DE STERK, Hans (DASP / DPAE)
U. Waterloo
Numerical Modeling of MHD Space Plasmas
(Modeling of Space Plasmas)

DISCHER, Dennis (DMBP-DCMMP / DPMB-DPMCM)
U. Penn.
Matrix elasticity effects on Differentiation processes with insights from the Mechanics of Protein Conformation
(Biologically-Inspired Materials)

DRAKE, Paul (DPP-DASP / DPP-DPAE)
U. Michigan
High-energy-density Hydrodynamics and Radiation Hydrodynamics
(Plasmas in Laboratory and Astrophysical Environments)

DUBOWSKI, Jan (DMBP-DIMP-DIAP-DOP / DPMB-DPIM-DPIA-DOP)
U. de Sherbrooke
Miniaturized Quantum Semiconductor Device for Photonic Detection of Viruses and Bacteria
(Biophotonics and Applied Biomedical Physics)

DURIC, Neb (DMBP-DIMP-DIAP-DOP / DPMB-DPIM-DPIA-DOP)
Wayne State U.
Ultrasound Tomography: A Decades Long Journey from the Lab to the Clinic
(Biophotonics and Applied Biomedical Physics)

ELLIS, Tom (DIMP / DPIM)
Canadian Light Source
Overview of Instrumentation at CLS
(Instrumentation at the Canadian Light Source)

FENSTER, Aaron (DMBP-DIMP-DIAP-DOP / DPMB-DPIM-DPIA-DOP)
U. Western Ontario
3D Ultrasound Imaging of the Carotid Arteries
(Biophotonics and Applied Biomedical Physics)

FOREST, Cary (DPP-DASP / DPP-DPAE)
U. Wisconsin
Plasma and Liquid Metal Dynamo Experiments
(Plasmas in Laboratory and Astrophysical Environments)

FOURKAL, Eugene (DOP-DPP)
Philadelphia
Acceleration of protons by high-power lasers for medical applications: Current challenges and future directions
(Relativistic laser plasma interactions and particle sources)

FRANCOEUR, Sebastien (DOP-DCMMP / DOP-DPMCM)
Ecole Polytechnique
Atomic Size Quantum Dots
(Advanced Materials and Photonic Crystals)

FRANKLIN, Ursula, **(CEWIP / CEFEP)**
Univ. of Toronto
to be announced / à venir
(CEWIP session)

FREIDEL, Laurent **(DTP / DPT)**
Perimeter Institute for Theoretical Physics
to be announced / à venir
(Quantum Gravity)

GESHNIZJANI, Ghazal **(DTP / DPT)**
Perimeter Institute for Theoretical Physics
Cuscuton Bounce, a scenario of bouncing cosmology without instabilities
(Gravitation and Cosmology - Lev Kofman memorial session)

GHEZELBASH, Masoud **(DTP / DPT)**
U. Saskatchewan
Atiyah-Hitchin Space in Einstein-Mawell-Chern-Simons Theory
(Mathematical Physics)

GIRT, Erol **(DCMMP / DPMCM)**
SFU
Exchange Stiffness and Incoherent Magnetization Reversal
(Magnetism)

GOMIS, Jaume **(DTP / DPT)**
Perimeter Institute for Theoretical Physics
Exact Results in Gauge Theories and 2d CTFs
(New Developments in Field Theory)

GONCHAROVA, Lyudmila **(DCMMP-DSS / DPMCM-DSS)**
UWO
Semiconductor-Dielectric Interfaces in the Nano Age
(Interfaces and Thin Films)

GRANT, Darren **(PPD)**
U. Alberta
The IceCube Neutrino Observatory: Status and Initial Results
(Neutrino Physics)

GRUTTER, Peter **(DMBP-DCMMP / DPMB-DPMCM)**
McGill U
Stress, Electrochemistry and Microcantilever-based Biochemical Sensing
(Biosensors and Microfluidics)

GWINNER, Gerald **(DAMPhi / DPAMip)**
U. Manitoba
Towards an atomic parity violation measurement with laser-trapped francium at ISAC
(Precision Physics)

HAUGEN, Harold **(DOP)**
McMaster U.
Femtosecond Laser Ablation and Micromachining of Semiconductors and Dielectrics
(Applications of Lasers)

HEARTY, Christopher **(PPD-DTP / PPD-DPT)**
UBC
Bottomonium results and new physics searches from the BaBar Upsilon resonance dataset
(Rare Decays and CP Violation)

HEGMANN, Frank **(DOP-DPP)**
U. Alberta
Exploring ultrafast hot electron dynamics in semiconductors with intense terahertz pulses
(THz radiation: generation and applications)

HESSELS, Eric **(DAMPhi / DPAMip)**
York U.
Precise Measurement of the n=2 Triplet P fine Structure of He: a path to a precise determination of the fine structure constant
(Precision Physics)

HINZER, Karin **(DOP)**
U. Ottawa
High Efficiency Photovoltaics
(Special Topics in Optics)

HITCHCOCK, Adam **(DIMP / DPIM)**
McMaster University
Chemical imaging at 30 nm spatial resolution in 2-d and 3-d with Scanning Transmission X-ray Microscopy
(Instrumentation at the Canadian Light Source)

HOCKING, Wayne **(DASP / DPAE)**
UWO
Middle Atmosphere Dynamical Studies with Meteor Radars
(Atmospheric Physics)

HOWLADER, Matiar **(DPP)**
McMaster U.
to be announced / à venir
(Plasmas at work in material science, medical and industrial applications)

IMAI, Takashi **(DCMMP / DPMCM)**
U. McMaster
NMR investigation of iron-based high temperature superconductors
(Spin Fluctuations and Superconductivity)

JAMES, Gordon **(DASP / DPAE)**
CRC
Prospects for space radio science in Canada
(Space Physics and Space Weather)

JAYACHANDRAN, P.T. **(DASP / DPAE)**
UNB
The Canadian High Artic Ionospheric Network (CHAIN) - Early results
(Canadian Contributions to Ionospheric Physics: Recent Advances and Innovative Techniques)

JENNEWEIN, Thomas **(DAMPhi-DCMMP-DOP-DTP-DSS / DPAMip-DPMCM-DOP-DPT-DSS)**
U. Waterloo
Towards global quantum communication networks with satellites
(Quantum Information)

JOHNS, Paul **(DMBP-DOP / DPMB-DOP)**
Carleton U.
X-Ray Scatter Imaging for Medicine
(Medical Physics I)

JUNCKER, David **(DMBP-DCMMP / DPMB-DPMCM)**
McGill U
Microfluidic Probe for Hydodynamic flow confinement and forming floating gradients in open space
(Biosensors and Microfluidics)

KALMAN, Calvin S. **(DPE / DEP)**
Concordia University
Enhancing Students' Understanding of Concepts by Getting Students to Approach Text in the Manner of a Hermeneutical Circle
(Teaching Physics to a Wider Audience)

KAPLAN, David **(DMBP-DCMMP / DPMB-DPMCM)**
Tufts
to be announced / à venir
(Biologically-Inspired Materials)

KOUSTOV, Alexandre **(DASP / DPAE)**
U. Sask.
Combining SuperDARN and satellite data: What have we learned about high-latitude ionosphere
(Canadian Contributions to Ionospheric Physics: Recent Advances and Innovative Techniques)

KROL, Andrzej **(DOP-DPP)**
SUNY
Development and exploration of ultrafast laser-produced plasma x-ray source for biomedical imaging applications
(Relativistic laser plasma interactions and particle sources)

KRUSHELNICK, Karl **(DOP-DPP)**
U. Michigan
Ion acceleration using ultra-high power lasers
(Relativistic laser plasma interactions and particle sources)

LAROCHE, Gaétan **(DPP)**
U. Laval
Plasma surface modification strategies for biomedical applications
(Plasmas at work in material science, medical and industrial applications)

LECLERC, Mario **(DCMMP-DOP / DPMCM-DOP)**
U. Laval
Polymeric Solar Cells
(Advanced Materials and Photonic Crystals)

LEGARE, Francois **(DAMPhi-DOP-DPP / DPAMip-DOP-DPP)**
INRS
to be announced / à venir
(Attosecond Science and High Order Harmonics)

LEVINE, Alexander **(DCMMP-DTP / DPMCM-DPT)**
UCLA
Cell Quakes: Mechanics and microrheology in living cells and active gels
(Condensed Matter Theory)

LITHERLAND, A.E. **(DHP)**
U. of Toronto
Nuclear Structure and Reaction Studies in Canada 1945-1965
(Research at Toronto and Chalk River: The beginning)

LONGTIN, André **(DCMMP-DTP / DPMCM-DPT)**
U. d'Ottawa
Sensory Neurophysics
(Condensed Matter Theory)

LOPINSKI, Greg **(DCMMP-DSS / DPMCM-DSS)**
NRC
Molecular sensing on chemically modified silicon surfaces - from gas phase to solution
(Interfaces and Thin Films)

MacDONALD, Rob **(PPD)**
U. of Alberta
Status of the PICASSO Spin-Dependent Dark Matter Search
(Dark Matter Searches)

MARJORIBANKS, Robin **(DOP-DPP)**
U. Toronto
Beyond Brunel: Controlling and managing absorption in ultra-intense laser-matter interaction
(Relativistic laser plasma interactions and particle sources)

MARSIGLIO, Frank **(DCMMP-DTP / DPMCM-DPT)**
U. Alberta
The Dynamic Hubbard Model: Results from DMFT
(Condensed Matter Theory)

MARTIN, Jeff **(PPD-DNP / PPD-DPN)**
U. Winnipeg
Experiments for an Ultracold Neutron EDM Search
(Fundamental Symmetries)

MASON, Thomas **(DMBP-DCMMP / DPMB-DPMCM)**
UCLA
Phase behavior and jammed states of Brownian polygons in two dimensions
(Biological and Soft Materials)

McCREERY, Richard **(DCMMP / DPMCM)**
U. Alberta
Resonant Electron Transport in 1-5 nm Thick Molecular Electronic Junctions
(Molecular Electronics and Graphene)

MILLER, Dwayne **(DMBP-DOP / DPMB-DOP)**
U of Toronto
to be announced / à venir
(Medical applications and dynamical molecular imaging)

MOON, Dae-Sik **(DPP-DASP / DPP-DPAE)**
U. Toronto
Hot interstellar plasma from supernova explosion and study of core-collapse supernova explosion and nucleo-synthesis
(Plasmas in Laboratory and Astrophysical Environments)

MORRIS, Steve **(DPE / DEP)**
U of Toronto
Physics and Television
(Teaching Physics to a Wider Audience)

MORRISSEY, David **(PPD-DTP / PPD-DPT)**
TRIUMF
New Physics at the Energy Frontier
(Energy Frontier and Phenomenology)

MOUSSEAU, Normand **(DMBP / DPMB)**
U. Montreal
Simulating amyloid formation - challenges and progress
(Biophysics I)

MURRAY, Norman **(DTP / DPT)**
CITA, U. Toronto
The baryonic physics of galaxy and star formation
(Theoretical Astrophysics)

MYATT, Jason **(DPP-DOP)**
U. Rochester
High-intensity laser-matter interaction experiments on the

kJ-class OMEGA EP laser
(Relativistic laser plasma interactions and particle sources)

NOEL, Jean-Marc (DASP / DPAE)
RMC
The effects of ionospheric electrodynamics on low-earth orbiting satellites
(Modeling of Space Plasmas)

OFFENBERGER, Alan (DHP-DOP)
U. Alberta
High Intensity Lasers for Plasma/Fusion Science (IR to UV)
(History of the Laser in Canada)

OLIN, Art (PPD-DTP / PPD-DPT)
TRIUMF
Results of the TRIUMF Weak Interaction Symmetry Test
(Rare Decays and CP Violation)

PANTALONY, D. (DHP)
Canadian Science and Tech. Museum
Exploring Canada's Nuclear History Through Artifacts, 1945-1970
(Research at Toronto and Chalk River: The beginning)

PARAMEKANTI, Arun (DAMPhi-DCMMP / DPAMip-DPMCM)
U. Toronto
Superfluid insulator transitions, superflow instabilities, and novel pairing states of atomic fermions in an optical lattice
(Quantum Optics and Cold Atoms)

PATTON, Dave (DPE / DEP)
Trent U.
Interactive Online Assignments and Quizzes in Introductory Astronomy
(Curriculum Development and Revitalisation)

PEREPICHKA, Dmitrii (DCMMP-DSS)
McGill U.
pi-Electron Functional Organic Molecules in Flatland. Why Synthetic Chemists need Scanning Tunneling Microscopy?
(Interfaces and Thin Films)

PERRIN, Agnès (DAMPhi / DPAMip)
U. Paris
Quantitative spectrscopy for several troposheric and stratospheric molecules (formaldehyde, nitric acid, and formic acid)
(Molecular Spectroscopy)

REICHERT, Jonathan (DPE / DEP)
TeachSpin
Developing Instruments to Expand the Canon of Advanced Lab Experiments
(Curriculum Development and Revitalisation)

REID, Leslie (DPE / DEP)
U of Calgary
The Science Service Course - Examining its Impact through the Lens of Science Literary
(Interactive Teaching, Teaching with Technology, and Curriculum Development)

RHEINSTADTER, Maikel (DMBP-DCMMP / DPMB-DPMCM)
McMaster U.
Nanobiology: Membranes and proteins in motion
(Biological and Soft Materials)

RONEY, Michael (PPD)
U. Victoria
Precision Frontier at the SuperB Flavour Factory
(Energy Frontier and Future Colliders)

ROWE, David (DNP / DPN)
U of Toronto
An algebraic paradigm for nuclear structure physics
(Nuclear Structure)

RUIZ, Chris (DNP / DPN)
TRIUMF
Direct Measurements of Radiative Capture Reactions of Astrophysical Importance Using Radioactive Beams
(Nuclear Astrophysics)

RUTENBERG, Andrew (DMBP-DCMMP / DPMB-DPMCM)
Dalhousie U.
Monodisperse domains by proteolytic control of the coarsening instability
(Biological and Soft Materials)

SCOTT, Douglas (DTP / DPT)
UBC
The Cosmic Microwave Background
(Theoretical Astrophysics)

SHEPHERD, Theodore (DASP / DPAE)
U of T.
Global-scale teleconnections in the troposphere-stratosphere-mesosphere system
(Climate Processes)

SILVA, Carlos (DCMMP / DPMCM)
U. de Montréal
Excitons in lamellar polymeric semiconductors
(Molecular Electronics and Graphene)

SIMON, Christoph (DAMPhi-DCMMP-DOP-DTP-DSS / DPAMip-DPMCM-DOP-DPT-DSS)
U. Calgary
Quantum memories and quantum information processing with photons and atomic ensembles
(Quantum Information)

SINCLAIR, David (PPD)
Carleton U/TRIUMF
EXO - A Search for Neutrino-less Double Beta Decay in Xenon
(Neutrino Physics)

SINCLAIR, Tony (DIMP-DIAP / DPIM-DPIA)
U of Toronto
The Physics of Ultrasonic Nondestructive Evaluation
(Joint DIMP/DIAP Session)

SINGH, Dinesh (DTP / DPT)
U. of Regina
Assessing the Conceptual Challenges and Future of Quantum Gravity
(Quantum Gravity)

SLAVIN, Al (DPE / DEP)
Trent U.
Just-in-time-teaching: timely student feedback helps you come prepared for class
(Interactive Teaching, Teaching with Technology, and Curriculum Development)

SMOLYAKOV, Andrei **(DPP-DASP / DPP-DPAE)**
U. Saskatchewan
Zonal flows in plasmas and geostrophic fluids
(Plasmas in Laboratory and Astrophysical Environments)

SPANSWICK, Emma **(DASP / DPAE)**
U. Calgary
Auroral indicators of plasma sheet flow
(Magnetospheric Physics)

STAFFORD, Luc **(DPP)**
U. Montreal
Control of plasma-wall and plasma-substrate interactions in high-density plasma etching of complex oxides in reactive plasmas
(Plasmas at work in material science, medical and industrial applications)

STELZER-CHILTON, Oliver **(PPD)**
TRIUMF
Highlights from the CDF Experiment at the Tevatron Collider
(Collider Physics)

STOICHEFF, Boris **(DHP-DOP)**
U. Toronto
Early Canadian Development and Research in Laser Science
(History of the Laser in Canada)

TEUSCHER, Richard **(PPD)**
U. of Toronto
New High Energy Results from ATLAS at the LHC
(Collider Physics)

THEWALT, Michael **(DCMMP / DPMCM)**
SFU
Highly enriched ^{28}Si - the perfect semiconductor
(Semiconductor Materials and Devices)

THOMAS, Alec **(DPP-DOP)**
U. Michigan
Brilliant sources of x-rays from laser wakefield accelerators
(Relativistic laser plasma interactions and particle sources)

THOMPSON, Chris **(DPP-DASP / DPP-DPAE)**
U. Toronto
to be announced / à venir
(Plasmas in Laboratory and Astrophysical Environments)

TIEDJE, Tom **(DCMMP / DPMCM)**
U. Victoria
Growth and Properties of $GaAs_{1-x}Bix$: A Lattice Mismatched Semiconductor Alloy
(Semiconductor Materials and Devices)

TOKARYK, Dennis **(DAMPhi / DPAMip)**
UNB
Molecular spectroscopy using far-infrared synchrotron radiation from the Canadian Light Source
(Molecular Spectroscopy)

TORTOLI, Piero **(DIAP / DPIA)**
U. of Florence
Development and non-standard applications of a programmable ultrasound research platform
(DIAP session)

URQUHART, Stephen **(DIMP / DPIM)**
U. Saskatchewan
Chemical Microanalysis of Surfaces by X-ray Microscopy
(Instrumentation at the Canadian Light Source)

VAN LEIROP, Johan **(DCMMP / DPMCM)**
U. Manitoba
Magnetism in a macroscopic 3D nanoparticle-based crystal
(Magnetism)

VENUGOPAINA, Raju **(DNP / DPN)**
Brookhaven National Lab
to be announced / à venir
(Nuclear Matter under Extreme Conditions)

VIEIRA, Pedro **(DTP / DPT)**
Perimeter Institute for Theoretical Physics
Y-system for Scattering Amplitudes
(New Developments in Field Theory)

VITKIN, Alex **(DMBP / DPMB)**
OCI/U of Toronto
to be announced / à venir
(Medical Physics II)

WALTON, Mark **(DTP / DPT)**
U. Lethbridge
Non-standard walls in (phase-space) quantum mechanics from the Morse potential
(Mathematical Physics)

WANG, Xin-Nian **(DNP / DPN)**
Lawrence Berkeley
Magnetic properties of LuFe204+δ
(Nuclear Matter under Extreme Conditions)

WILKING, Michael **(PPD)**
TRIUMF
Status of the T2K Experiment
(Neutrino Physics)

WISEMAN, Paul **(DMBP / DPMB)**
McGill U.
to be announced / à venir
(Cellular Biophysics)

WOODS, A.D.B. **(DHP)**
AECL
Liquid Helium Research at Toronto and Chalk River in the 50s and 60s
(Research at Toronto and Chalk River: The beginning)

YAMANI, Zahra **(DCMMP / DPMCM)**
NRC
Evolution of the spin susceptibility near the superconducting critical doping in YBCO
(Spin Fluctuations and Superconductivity)

YETHIRAJ, Anand **(DMBP-DCMMP / DPMB-DPMCM)**
MUN
Novel forms of colloidal self-organization in external fields
(Biological and Soft Materials)

ZHANG, X-C **(DOP-DPP)**
Rensselaer
Air-plasma photonics: THz wave generation, detection, and its applications
(THz radiation: generation and applications)