THE MICHIGAN CENTER FOR THEORETICAL PHYSICS[1]

ANNUAL REPORT 2005–2006

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Each spring, the Director of The Michigan Center for Theoretical Physics shall present an annual report and submit the MCTP budget for the next fiscal year. This is the sixth.

[1] **http://www.umich.edu/~mctp/**
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1. Overview

1.1 Message from the Director

The fiscal year July 2005 - June 2006 was an active one for the Michigan Center for Theoretical Physics (MCTP). During this period, there were six major scientific programs exemplifying the diverse activities of the MCTP: the "Cosmological Constraints from Sloan Digital Sky Survey Galaxy Clusters" workshop, the "John von Neumann Celebration", the "Relativistic Jets: The Common Physics of AGN, Microquasers, and Gamma-Ray Bursts" conference, the "Great Lakes Strings" conference, the "LHC Inverse Problem" workshop, and the "Inflation After WMAP" workshop. The MCTP also supported a large number of visitors over the last year, and organized successful year-long visitor programs both for young high energy theorists and for condensed matter and quantum computing.

We continued support for two MCTP Postdocs: Evgeniy Khain, Hebrew University of Jerusalem (cancer modeling) at 100% and Shi-Liang Zhu, Institute for Scientific Interchange Foundation, (coherent control, quantum computing) at 50% support (with the other 50% coming from FOCUS). MCTP support for each postdoc will terminate at the end of their appointments in August 2007. Future MCTP postdoc support has not been budgeted beyond these two pre-existing appointments.

During the fiscal year MCTP members produced 36 publications in various areas of theoretical physics, bringing the total number of MCTP publications to 419. The list of publications may be found in Appendix F. Highlights include:

- High Energy Physics: String theory, M-theory and D-branes, non-commutative geometry, particle physics phenomenology including CP violation and top quark and Higgs physics, $g-2$ and supersymmetry.
- Condensed Matter Physics: Critical dynamics, superconductivity, phonon radiation, bond percolation, vortex structures.
- Relativity and Astrophysics: Gravitational lensing, redshift surveys, X-ray astronomy, black holes, relativistic jets, cosmic inflation and dark energy.

We welcomed two new Full Members this year: Peter Woolf (Chemical Engineering) and Igor Kriz (Mathematics). There are currently 70 Full members from the Departments of Aerospace Engineering, Astronomy, Biology, Biophysics, Chemical Engineering, Complex Systems, Electrical Engineering, Materials Science and Engineering, Mathematics and Physics. We are happy to note that the Full Membership includes several experimental colleagues who take an active interest in theory. In addition there are 89 Associate Members from an even more diverse list of departments within and without Michigan. The membership list is given in Appendix D.

According to the bylaws, each spring, the Director of The Michigan Center for Theoretical Physics shall present an annual report and submit the projected MCTP budget for the next fiscal year. Accordingly, we have included the actual budget for fiscal 2004–2005 and fiscal 2005-2006, as well as the projected budget for 2006-2007.

The Director's state-of-the-center summaries are delivered annually at the Winter MCTP General Meeting. They are available on the web at: http://www.umich.edu/~mctp/history.htm

Executive Committee member elections are held at the winter General Meeting. Franco Nori (Condensed Matter/AMO/Biophysics) will be stepping down to be replaced by Luming Duan, as will Anthony Bloch (Interdisciplinary) to be replaced by Dan Burns. We would like to take this opportunity to thank Franco and Anthony for their helpful advice and hard work and to welcome aboard Luming and Dan.

1.2 Amendment to the Bylaws

A committee was appointed (R. Akhoury (Chair), C. Doering, and M. Campbell) to revise the Bylaws in the light of the wisdom gained in the initial five years of the MCTP. The new proposed bylaws will soon be posted on the MCTP website for comments, and will be voted on at the fall General Meeting.

1.3 Major external funding

The MCTP has continued with major external funding in the form of an annual Matching Funds Grant for the particle physics and cosmology side of the MCTP. So far this has brought in $1,125,000 from the DOE (PIs Gordon Kane, James Liu, and Myron Campbell). These MCTP matching funds (denoted Task T) are separate from, and in addition to, the regular high energy theory DOE grant (denoted Task G). They are aimed at strengthening the mission of the MCTP, and are controlled by MCTP members from the particle physics and cosmology sides. None of the matching funds can be used for travel or salary for particle theory and cosmology faculty; they are only for activities that extend and amplify MCTP activities.

External fundraising efforts began in earnest last year with the involvement of the LS&A Development Office. One initiative has been the appointment of a "Director's Council" composed of influential members of the business, media and scientific communities, whose job will be to spread the word on the Center's activities and provide leadership in the development campaign. We have been excited to obtain a Visiting Committee, under the leadership of Stephen D'Arcy, composed of about 20 business and community leaders from Southeastern Michigan, who have agreed to help the MCTP achieve its goals and strengthen the MCTP financially.

2. Fiscal year: 2005-2006

2.1 Conferences and Workshops

The MCTP arranged and funded seven conferences and workshops in 2005-2006.

"Cosmological Constraints from Sloan Digital Sky Survey Galaxy Clusters" workshop, May 9-20, 2005
"John von Neumann Celebration", September 30, 2005
"Relativistic Jets: The Common Physics of AGN, Microquasers and Gamma-Ray Bursts" conference, December 14-17, 2005
"Great Lakes Strings" conference, March 31 – April 2, 2006

"LHC Inverse Problem" workshop, April 12-15, 2006
"Inflation After WMAP" workshop, May 18-20, 2006
"Exotic Atomic Physics at RIA" workshop, TBA

Note that funds for the John von Neumann Celebration were awarded in FY05. The ability of the MCTP to respond to new developments was demonstrated by the Inflation after WMAP workshop, which was organized in response to the release of WMAP three-year data.

2.2 Colloquia and Public Lectures

In keeping with its interdisciplinary mission, the MCTP hosts not-so-technical Colloquia designed to help us learn more about what our colleagues in other fields are doing. Coffee and cookies are served beforehand. Starting this past year, the MCTP has also put together a formal Public Lecture series. The following talks were delivered over the last year:

"Concerto-I and Opus by A. Einstein", S. James Gates, Jr. (University of Maryland), Tuesday, January 17, 2006
"What Does Quantum Field Theory Have In Common With Quantitative Marketing of Automobiles?", Dr. Suzhou Huang (Ford Research and Advanced Engineering), Thursday, March 30, 2006.
"Inflation After WMAP", Paul Steinhardt (Princeton University), Thursday, May 18, 2006.

2.3 Visitors

In addition to workshops and conferences, visitor programs are a major component of the MCTP's activities. In addition to support for individual visitors, the MCTP also provides resources for thematic visitor programs. Individual visitors (both short and long term) include:

Douglas Sployar (UCSC), June 28-Aug. 22, 2205; Oct. 14-19, 2005
Giovanni Russo (University of Catania, Italy), July 15 - August 10, 2005
Eshel Ben-Jacob (Tel Aviv University)), August 7 - 16, 2005 and September 11 – 15, 2005
Martinus Veltman (University of Michigan Emeritus), September 18 - October 18, 2005
Jocelyn Bell Burnell (Oxford University), September 19-23, 2005
Peter Milonni (Los Alamos), October 16-22, 2005
Lorena Gazzola (Nottingham University), December 11- 18, 2005
Glenn Starkman (CWRU), December 12-15, 2005
Gurifre Vidal (Queensland University, Australia), Jan. 7-14, 2006
Sylvester James Gates, Jr. (University of Maryland), Jan. 16-20, 2006
Shina Tan (Chicago), Feb. 8-10, 2006
Davide Pisani (The National University of Ireland), Feb. 15-18, 2006; May 29-June 1, 2006
Congjun Wu (KITP, UCSB), April 2-9, 2006
Jacob Bourjaily (CERN), April 9-27, 2006
Bernardo Uribe (University of Michigan Mathematics), April 10-14, 2006
Milorad Milosevic (Universiteit Antwerpen), April 16-19, 2006

V. Misko (Unversiteit Antwerpen), April 16-19, 2006
Francois Peeters (Universiteit Antwerpen), April 16-19, 2006
Jian Hu (Purdue University), May 2-6
Wei Zhang (Gatech), May 14-16, 2006
Paul Steinhardt (Princeton University), May 18, 2006

In the past year, the MCTP also organized two visitor programs:

Visitor program for young high energy theorists
Visitor program in condensed matter and quantum computing

2.4 Graduate student summer support/fellowships, 2005

The MCTP supported the following six students during the Spring/Summer term 2005 (graduate advisor's name in parenthesis):

A. Castro (Larsen)
Y. Cui (Wells)
E. David (Adams)
P. Grajek (Kane)
C. Ilie (Akhoury)
N. Licata (Tkachenko)

The fellowship for Licata also includes support during the Spring/Summer term 2006.

In addition, legacy cost sharing commitments with NSF and with NASA have been targeted towards graduate student support. As cost sharing agreed to with NSF, a total of $159,204 was provided over the period 2003–2006 to support graduate students on the NSF grant "Fronts, fluctuations and growth" (now ended). Also, cost sharing with NASA over the period 2004-2007 will provide a total of $63,000 towards graduate students, and is currently directed towards A. Moorhead (Adams). Cost sharing on the NASA grant is scheduled to terminate at the conclusion of FY07.

2.5 Undergraduate research scholars, 2005

The following undergraduate research scholars were supported during the 2005-2006 academic year:

J. Bourjaily (Kane)
T. Bodiya (Duan)
R. Schabinger (Wells)
B. Sonday (Wells)

2.6 MCTP Computing

During the 2006 fiscal year, MCTP computer support has transitioned from internal support to support through the Physics Office of Computing Services (OCS). Along with this, the MCTP computer room reorganization that was initiated in FY05 (which included the purchase of new furniture) has essentially been completed.

The MCTP participated in the LS&A Sun buyout, and replaced the Sunblade machines with desktop powermac G5's. So far, experience with the G5's has been extremely positive, although at present the MCTP is holding off on the purchase of additional Apple hardware pending the completion of Apple's transition from the PowerPC to the Intel platform.

2.7 Successful proposals (2005-2006)

The MCTP Executive Committee received 28 proposals for various scientific activities and, after careful consideration, has recommended the following for approval by the Physics Department:

Conferences and Workshops

"Great Lakes String Theory Conference" MCTP-06-07 (Larsen, Liu, Pando Zayas)	$10,000
"Exotic Atomic Physics at RIA" MCTP-06-09 (Chupp)	$8,000
"SDSS Workshop" MCTP-06-10 (Evrard, McKay)	$11,000
"Relativistic Jets: The Common Physics of AGN, Microquasars and Gamma Ray Bursts" MCTP-06-26 (Hughes)	$15,000
"Inflation After WMAP" MCTP-06-27 (Freese)	$4,500
"LHC Conference" MCTP-06-28 (Kane)	$7,500
Total Conference and Workshop funding:	**$56,000**

Visitors

Akhoury, "Zakharov", MCTP-06-12	$4,000
Akhoury, "Yasuhiro Okada of KEK and Emil Mottola of LANL", MCTP-06-13	$1,500
Berman, "P. Milonni", MCTP-06-14	$1,020
Duan, "C. Wu, J. Hu, Q. Chen", MCTP-06-15	$4,000
Kane/Wells, "K. Dienes", MCTP-06-16	$10,000
Larsen/Liu/Pando Zayas, "Young High Energy Theorists Program", MCTP-06-17	$10,000
Nori, "CM, materials science, complex systems: V. Misko, S Savel'ev, A. Rakhmanov, V. Yampol'kii, N. Mitarai. CM, quantum optics, atomic physics: S. Ashhab, X. Hu, J.Q. You, L.F. Wei, Y.X. Liu. Comp biologist: C. Meachan, B. Salisbury, T. Ravasi", MCTP-06-18	$10,000
Nori, "Fabio Marchesoni", MCTP-06-19	$10,000
Pando Zayas, "B. Uribe", MCTP-06-20	$1,500
Smereka, "G. Russo", MCTP-06-2	$3,500
Zochowski/Sander, "Professor Eshel Ben-Jacob", MCTP-06-22	$4,000
Freese, " D. Spolyar", MCTP-06-27	$4,500

Duff, "M. Veltman"	$15,000
Total Visitor Funding:	**$79,020**

Student Support

Adams, Support for Eva David, MCTP-06-01	$7,000
Akhoury, Support for Cosmin Ilie, MCTP-06-02	$7,000
Tkachenko, Support for N. Licata, MCTP-06-03	$7,000
Akhoury/Kane/Larsen/Wells, Support for A. Castro, Y. Cui, P. Grajek, MCTP-06-24	$10,500
Kane, additional travel funds for P. Kumar	$1,320
Graduate Student Support	**$32,820**
Kane, Bourjaily summer support., MCTP-06-05	$6,000
Wells, UG Summer Research: B. Sonday, R. Schabinger, T. Bodiya, MCTP-06-06	$10,000
Undergraduate Support	**$16,000**
Total Student Support:	**$48,820**

The total of the above corresponds to $183,840 of MCTP funds allocated through proposals. The remaining portion of the FY06 budget was directed towards cost sharing (which will end after FY07), postdocs, administrative (secretary, computing, supplies) and discretionary funding.

2.8 The 2005–2006 budget (actual)

Income statement
For the fiscal year ending June 30, 2006

Income		
LS&A allocation		$400,000
Physics allocation		$50,000
Surplus from 2004-2005		$31,882
Unspent funds recovery		
Baryogenesis workshop (FY03) closeout	$1,390	
String Phenomenology (FY04) closeout	$16,871	
Total unspent funds recovery		$18,261
Total income		**$500,143**
Expenses		
Secretaries		$63,560
Computing		$2,349
Office supplies, postage, telephone		$4,543
Development		$2,467
Discretionary funds		$19,765
Outreach and public lectures		$4,951
Benefits recharge and year end accruals		$6
Cost sharing commitments		
Fronts, Fluctuations and Growth (NSF)	$38,954	
NASA grant	$17,527	

Total cost sharing commitments		$56,481
Visitor programs		$91,607
Conferences and workshops		
Expenses for workshops prior to FY06	$10,680	
MG-06-07: Great lakes strings	$10,000	
MG-06-09: Exotic atom physics	$8,000	
MG-06-10 SDSS galaxy clusters	$1,080	
MG-06-26: Relativistic jets	$15,000	
LHC inverse workshop	$7,500	
Total conferences and workshops		$52,260
1.5 MCTP postdoctoral fellows		$93,193
Postdoctoral travel		$8,009
6 Graduate student fellowships		$23,051
4 Undergraduate research scholars		$15,119
Total expenses		**$437,361**
Surplus (deficit)[1]		**$62,781**
Funds encumbered for FY07 workshops		$151,000
Funds encumbered for FY07 visitors		$58,945
Surplus (deficit) after encumbrances		**($147,164)**

Notes:
1. Numbers may not add up due to rounding.

3. Fiscal Year: 2006-2007

3.1 Conferences and workshops

The MCTP will hold the following workshops and conferences in 2006-2007:

"Large Deviations: Theory and Applications" workshop, June 4-8, 2007
"AAS Meeting of the Division on Dynamical Astronomy" Meeting
"Galaxy Cluster Cosmology with Optical and Sunyaey-Zeldovich Surveys" workshop
"Strings and Gauge Theories" workshop
"3rd LHC Inverse Problem" workshop
"From Microscopic to Macroscopic" conference
"The Dark Side II" workshop

In addition, the Exotic atomic physics at RIA workshop (funded in FY06) will take place in the 2006-2007 period.

3.2 Visitors

Planned individual short and long term visitors include:

Fabio Marchesoni (University of Camerino, Italy), July 26 – January 31, 2007
Chuanwei Zhang (University of Texas Austin)

Congjun Wu (KITP)
Giovanni Russo (University of Catania, Italy), August 17 - September 9, 2006
Peter Milonni (University of Chicago)
Eung Jin Chun (KAIST), August 1, 2006 - July 31, 2007
Malcolm Perry (Cambridge), July 18 - August 22, 2006
Fabio Marchesoni (Universita di Perugia, Italy), July 26, 2006 - January 31, 2007
Martinus Veltman (University of Michigan Emeritus), Sept. 18 – Oct. 20, 2006
A.N. Berker (Koc University, Turkey), May or June 2007

The MCTP will also run two visitor programs:

Visitor program for young high energy theorists
Visitor program in computational physics and biology

Note that the MCTP will respond to additional requests for visitors througout the year through discretionary funding whenever appropriate.

3.3 MCTP Computing

The primary focus of MCTP computing is on providing desktop computing for the MCTP postdocs, visitors (long and short term) and workshop attendees. In this regard, the MCTP is maintaining a cluster of five dual-G5 Powermacs, as well as roughly thirteen Linux and three Windows machines. Support and maintenance of these computers is being provided by Physics OCS.

3.4 Successful proposals 2006-2007

The MCTP Executive Committee received 21 proposals for various scientific activities and, after careful consideration, has recommended the following for approval by the Physics Department:

Workshops and Conferences

"AAS Meeting of the Division on Dynamical Astronomy" MCTP-07-02 (Adams, Scheeres)	$12,000
"Galaxy Cluster Cosmology with Optical and Sunyaey-Zeldovich Surveys" MCTP-07-04 (McKay, Evrard, Tarle, Gerdes)	$10,000
"Large Deviations: Theory and Applications" MCTP-07-05 (Amirdjanova, Doering, Sander)	$25,000
"Strings and Gauge Theories" MCTP-07-07 (Larsen, Pando Zayas, Liu)	$25,000
"3rd LHC Inverse Problem" MCTP-07-12 (Kane)	$12,000
"From Microscopic to Macroscopic" MCTP-07-14(Zockowski, Savit)	$22,000
"The Dark Side II" MCTP-07-15 (Freese, Bernstein, Gondolo, McKay)	$35,000
Workshop/Conference Total:	**$141,000**

Visitors

L. Duan, MCTP-07-01, Visitor support for Z. Zhang and C. Wu	$3,795
P. Smereka, MCTP-07-03, Visitor support for G. Russo	$3,500

P. Berman, MCTP-07-06, Visitor support for P. Milonni	$1,650
L. Pando Zayas, J. Liu, F. Larsen, MCTP-07-08, Visitor program for young high energy theorists	$16,000
G. Kane, A. Pierce, J. Wells, MCTP-07-11, Visitor support for E. J. Chun (1 year sabbatical)	$12,000
G. Kane, MCTP-07-13, Visitor support for M. Perry	$2,000
F. Nori, MCTP-07-18, Visitor support for F. Marchesoni (6 mos)	$10,000
F. Nori, G. Estabrook, MCTP-07-19, Visitor program in Computational physics and biology	$10,000
B. Savit, L. Sander, MCTP-07-20, Visitor support for A.N. Berker	$2,800
Visitor Total:	**$61,745**

Other

C. Monroe, L. Duan, MCTP-07-17, 2007 Michigan Summer School	$10,000
Other Total:	**$10,000**

The total of the above funds allocated through proposals is $212,745. The full budget is given in the following section.

3.5 2006-2007 budget (projected)

For the fiscal year ending June 30, 2007

Income		
LS&A allocation		$300,000
Physics allocation		$150,000
Surplus from 2005-2006		$62,781
Total income		**$512,781**
Expenses		
Secretaries		$74,000
Computing		$26,000
Office supplies, postage, telephone		$5,500
Development		$4,500
Discretionary funds		$26,000
Outreach and public lectures		$10,000
Cost sharing on NASA grant		$21,000
Visitor programs		$76,745
Conferences and workshops		
MG-07-02: AAS meeting	$12,000	
MG-07-04: Observing all the baryons	$10,000	
MG-07-05: Large deviations	$25,000	
MG-07-07: Strings and gauge theories	$25,000	
MG-07-12: 3rd LHC inverse workshop	$12,000	
MG-07-14: Microscopic to macroscopic	$22,000	
MG-07-15: The dark side II	$35,000	
MG-07-17: MCTP summer school	$10,000	
Total conferences and workshops		$151,000

1 MCTP postdoctoral fellow	$62,400
Postdoctoral travel	$2,000
Graduate student fellowships	$53,000
Teaching fellowships	$15,000
Total expenses	**$527,145**
Surplus (deficit)	**($14,364)**

4. Acknowledgments

We would like to take this opportunity to thank the present and just past Executive Committee members, Jim Liu, Franco Nori, Tony Bloch, Fred Adams, Luming Duan, Dan Burns, as well as members of the other MCTP committees, for their wisdom and hard work. We are particularly grateful to the MCTP secretaries, Angela Milliken and Deborah Stark-Knight for their valuable work and support.

5. Appendices

A. Actual Budget for fiscal year 2004-2005

Income statement
For the fiscal year ending June 30, 2005

Income		
LS&A allocation		$400,000
Physics allocation		$50,000
Surplus (deficit) from 2003-2004		($2,359)
Unspent funds recovery		
Fronts, fluctuations, growth (FY02) closeout	$11,397	
Reallocation of MCTP postdoc funds	$52,218	
Total unspent funds recovery		$63,615
Total income		**$511,256**
Expenses		
Secretaries		$35,857
Computing		$13,287
Office furniture		$4,043
Office supplies, postage, telephone		$5,192
Development		$3,829
Discretionary funds		$11,711
Benefits recharge and year end accruals		($526)
Cost sharing commitments		
Fronts, Fluctuations and Growth (NSF)	$36,440	
NASA grant	$17,900	
Young string theorists (NSF ADVANCE)	$10,000	
Total cost sharing commitments		$64,340
Visitor programs		$82,185
Conferences and workshops		
Expenses for workshops prior to FY05	$9,339	
MG-04-06: String phenomenology final funds	$20,000	
MG-04-12: Modeling cancer	$25,000	
MG-04-14: Cosmology with galaxy clusters	$4,914	
Top quark symposium (FY05)	$7,136	
MG-06-10: SDSS galaxy clusters	$5,318	
Total conferences and workshops		$71,707
2.5 MCTP postdoctoral fellows		$139,773
Postdoctoral travel		$8,131
4 Graduate student fellowships		$37,506
8 Undergraduate research scholars[1]		$2,340
Total expenses		**$479,375**
Surplus (deficit)[2]		**$31,882**

Notes:
1. The majority of funds supporting the above undergraduate research scholars was spent during FY04.

2. Numbers may not add up due to rounding.

B. Proposal

The original MCTP proposal may be found on the web:
http://www.umich.edu/`mctp/history.htm

C. Bylaws

The MCTP bylaws may be found on the web
http://www.umich.edu/~mctp/um_sector/MTPbylaws.html

D. Membership list

1. Full members

F. Adams (Physics)
K. Akerlof (Physics)
R. Akhoury (Physics)
J.W. Allen (Physics)
P. Berman (Physics)
A. Bloch (Mathematics)
J. Bregman (Astronomy)
P. Bucksbaum (Physics)
D. Burns (Mathematics)
M. Campbell (Physics)
T. Chupp (Physics)
S. Cremonini (Physics)
C. Doering (Mathematics)
I. Dolgachev (Mathematics)
L. Duan (Physics)
M. Duff (Physics)
G. Estabrook (Biology)
A. Evrard (Physics)
M. Falk (Materials Science and Engineering)
P. Federbush (Mathematics)
J. Fornaess (Mathematics)
K. Freese (Physics)
D. Gerdes (Physics)
E. Geva (Chemistry)
S. Glotzer (Chemical Engineering/Physics/Materials Science and Engineering)
K. Hecht (Physics)
P. Horja (Mathematics)
P. Hughes (Astronomy)
G. Kane (Physics)
T. Jackson (Mathematics)
S. Krimm (Biophysics)
J. Krisch (Physics)
I. Kriz (Mathematics)
F. Larsen (Physics)
R. Lewis (Physics)
J. Liu (Physics)

T. McKay (Physics)
C. Monroe (Physics)
S. Moukouri (Physics)
S. Mrenna (Fermilab)
H. Neal (Physics)
M. Newman (Physics)
F. Nori (Physics)
L. Pando-Zayas (Physics)
A. Pierce (Physics)
G. Raithel (Physics)
D. Richstone (Astronomy)
B. Roe (Physics)
L. Sander (Physics)
R. Savit (Physics)
D. Scheeres (Aerospace Engineering)
C. Simon (CSCS)
P. Smereka (Mathematics)
J. Smoller (Mathematics)
R. Spatzier (Mathematics)
G. Tarle (Physics)
A. Tkachenko (Physics)
Y. Tomozawa (Physics)
A. Uribe (Mathematics)
J. Vandermeer (Biology)
M. Veltman (Physics)
J. Wells (Physics)
D. Williams (Physics)
J. Wilson (Philosophy)
H. Winful (Electrical Engineering)
P. Woolf (Engineering)
A. Wu (Physics)
E. Yao (Physics)
R. Ziff (Chemical Engineering)
M. Zochowski (Physics)

2. Associate members

K. Augustyn (Research & Development, General Dynamics Advanced Information Systems)
J. Bernstein (Astronomy)
T. Bersano-Begey (Biomedical Engineering)
B. Blinov (Physics)
K. Bobkov (Physics, Duke University)
F. Bookstein (Gerontology)
J. Bourjaily (Physics)
M. Brehob (Electrical Engineering and Computer Sciences)
B. Burrington (Physics)
M. Busha (Physics)
J. Carroll (Materials Science and Engineering)
A. Castro (Physics)
J. Chapman (Physics)

Y. Chushak (Chemistry)
J. Conlon (Mathematics)
J. Dai (Physics, University of Utah)
J. Davis (Physics)
L.C. Davis (Ford Motor Research)
Paul de Medeiros (Physics)
M. Deutsch (Physics)
T.M. Donahue (Atmos Oceanic & Space Science)
B. Dubetsky (Physics)
R. Dupke (Astronomy)
A. Farmany (Azad University/Ilan University, Iran - Physics)
G. Flynn (Pharmacy)
T. Foth (Mathematics)
R. Freeling (Advanced Information Services)
H. Fu (Physics)
H. Garcia (Computer & Information Science)
D. Garfinkle (Oakland University)
G. Ghoshal (Physics)
E. Glass (University of Windsor)
A. Greenspoon (Mathematical Reviews)
K. Hass (Ford Motor Research; Physics)
C. Hayward (Physics & Astronomy)
P. Ion (Mathematical Reviews)
L. Ji (Mathematics)
T. Kamalov (Quantum Mechanics, Moscow State University)
E. Khain (Physics)
J. Kieffer (Materials Science and Engineering)
S. King (Physics)
R. Krasny (Mathematics)
J. Krick (Astronomy)
P. Kumar (Physics)
D. Li (Physics)
Y. Li (Physics)
Yixin Li (Radiation Oncology, Medical School)
R. Lindner (History)
S. Linic (Chemical Engineering)
D. Manna (Physics)
F. Marchesoni (Physics)
D. Maxwell (Romance Languages and Literature)
F. Mayer (Mayer Applied Research, Inc.)
B. McNaughton (Physics)
P. McRobbie (Physics)
J.M. Millunchick (Materials Science and Engineering)
D. Moehring (Physics)
L. Moffatt (Physics)
K. Mohamed (UPMS, Morocco)
D. Morrissey (Physics)
K. Myrie (Physics)
B. Nord (Physics)
T.W. O'Donnell (Physics/Science, Technology and Society Program/RC)

L. Okun (Physics)
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F. Publications

MCTP-05-81 Finn Larsen, *Entropy of Thermally Excited Black Rings*

MCTP-05-82 L. Anguelova, D. Vaman, *R^4 Corrections to Heterotic M-theory*

MCTP-05-83 Jason Kumar and James D. Wells, *Surveying Standard Model Flux Vacua on $T^6/Z_2 \times Z_2$*

MCTP-05-84 L. Pando Zayas, D. Vaman, *Condensing Momentum Models in 2-d 0A String Theory*

MCTP-05-85 Lilia Anguelova, Paul de Medeiros and Annamaria Sinkovicsm, *Topological membrane theory from Mathai-Quillen formalism*

MCTP-05-86 Per Kraus and Finn Larsen, *Microscopic Black Hole Entropy in Theories with Higher Derivatives*

MCTP-05-87 M. Battaglia, Asesh K. Datta, A. De Roeck, K. Kong, K. T. Matchev, *Contrasting Supersymmetry and Universal Extra Dimensions at Colliders*

MCTP-05-88 Asesh K. Datta, Kyoungchul Kong and Konstantin T. Matchev, *The impact of beamstrahlung on precision measurements of new physics at CLIC*

MCTP-05-89 Katherine Freese, The Dark Side of the Universe

MCTP-05-90 Dejan Stojkovic, Fred C. Adams and Glenn Starkman, *Information-preserving black holes still do not preserve baryon number and other effective global quantum numbers*

MCTP-05-91 Robert Schabinger, James Wells, *A Minimal Spontaneously Broken Hidden Sector and its Impact on Higgs Boson Physics at the LHC*

MCTP-05-92 Marcus Spradlin, Tadashi Takayanagi, Anastasia Volovich, *String Theory in Beta Deformed Spacetimes*

MCTP-05-93 Aseshkrishna Datta, Kyoungchul Kong, Konstantin T. *Matchev, Discrimination of Supersymmetry and Universal Extra Dimensions at Hadron Colliders*

MCTP-05-94 Katherine Freese, James T. Liu and Douglas Spolyar, *Devaluation: a dynamical mechanism for a naturally small*

cosmological constant

MCTP-05-95 Asesh Krishna Datta, Gordon L. Kane and Manuel Toharia, *Is it SUSY?*

MCTP-05-96 Chris Savage, Katherine Freese, Paolo Gondolo, Heidi Jo Newberg, *New Models for a Triaxial Milky Way Spheroid and Effect on the Microlensing Optical Depth to the Large Magellanic Cloud*

MCTP-05-97 Sergio Benvenuti, Manavendra Mahato, Y. Tachikawa and Leopoldo A, Pando Zayas, *The Gauge/Gravity Theory of Blown up Four Cycles*

MCTP-05-98 B. Thomas, M. Toharia, *Phenomenology of Dirac Neutrinogenesis in Split Supersymmetry*

MCTP-05-99 F. Canoura, J.D. Edelstein, L.A. Pando Zayas, A.V. Ramallo, D. Vaman, *Supersymmetric Branes on AdS_5 x $Y^{p,q}$ and their Field Theory Duals*

MCTP-05-100 Diana Vaman, York-Peng Yao, *Gluon recursion relations from the largest time equation*

MCTP-05-101 David Morrissey, James Wells, *The tension between gauge coupling unification, the Higgs boson mass, and a gauge-breaking origin of the supersymmetric mu-term*

MCTP-05-102 Benjamin A. Burrington and James T. Liu, *Spinning strings in AdS_5 x S^5: A worldsheet perspective*

MCTP-05-103 Nima Arkani-Hamed, Gordon L. Kane, Jesse Thaler, and Liantao Wang, *Supersymmetry and the LHC Inverse Problem*

MCTP-05-104 S. Benvenuti, L.A. Pando Zayas and Y. Tachikawa, *Triangle Anomalies from Einstein Manifolds*

MCTP-05-105 Robert McNees, *A New Boundary Counterterm for Asymptotically AdS Spacetimes*

MCTP-05-106 Freddy Cachazo, Marcus Spradlin, Anastasia Volovich, *A Note On the Iterative Structure of Loop Amplitudes*

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Zayas, *Central Extensions of Finite Heisenberg Groups in Cascading Quiver Gauge Theories*

MCTP-06-04 Leopoldo A. Pando Zayas and Norma Quiroz, *From Boundary States to Gravity Solutions in 2-D String Theory*

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MCTP-06-07 Gordon L Kane, Piyush Kumar, Jing Shao, *From Inclusive Signatures to String Theory?*

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