

THE MICHIGAN CENTER FOR THEORETICAL PHYSICS¹**ANNUAL REPORT 2009–2010**

*Michigan Center for Theoretical Physics
Randall Laboratory, Department of Physics, University of Michigan
Ann Arbor, MI 48109–1040, USA*



The workshop "Shining light on Black Holes"

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1. Overview

1.1 Message from the Director

The goal of the Michigan Center for Theoretical Physics is to promote research in theoretical physics and related fields. It is designed to have a strong infrastructure, so that to arrange a workshop or conference or visitor, the scientists only need to have a scientific structure – a workshop topic, dates and the desired speakers – and the MCTP secretariat can arrange everything else. Thus the marginal cost for scientists is much smaller than arranging their own workshop; this greatly facilitates having these important and stimulating activities. MCTP works by responding to proposals. There are 86 Full Members of MCTP, all professors at the University of Michigan with activity in theoretical physics. Over 2400 scientists have been brought to our campus by MCTP activities. Membership and participation are broadly open – the “theoretical” in MCTP refers to how resources and funds are used.

MCTP strengthens the research success of the university in many ways. It leverages additional grant support federally and elsewhere. It strengthens faculty recruiting since it strengthens research opportunities. Faculty and postdocs and students who participate in programs learn about the attractive science and ambience here and are thus more likely later to accept offers or send top people here.

The fiscal year beginning July 2009 - June 2010 has been a very productive one for the Michigan Center for Theoretical Physics (MCTP). During this period, there were eight major scientific programs of various areas of interests that MCTP facilitated: the [“Extreme Star Formation in Dwarf Galaxies Workshop”](#), the [“Shining Light on Black Holes”](#) workshop, the [“Midwest Relativity Meeting”](#), the [“Dark Stars”](#) workshop, the [“Spin Physics Symposium”](#), the [“Effective Field Theory in Cosmology Workshop 2010”](#), and the [“Spring Symposium on Higgs Boson Physics”](#). In addition, the MCTP hosted three mini-workshops on Dark Matter physics. The MCTP also supported a large number of visitors over the last year, and organized five successful year-long visitor programs, one for young high energy theorists, another for a special year of mathematical string theory, the third for young phenomenologists, the fourth on the topic of theory and simulation in molecular physics, and the last a theoretical biological physics series.

These workshops and visitor programs represent a major portion of the scientific impact of the MCTP. As such, we have provided additional explicit information on these activities -- both for the previous and upcoming fiscal year -- in the sections that follow.

During the fiscal year MCTP members produced 46 publications in various areas related to the MCTP goals, bringing the total number of MCTP publications to 733.

There are currently 86 Full members from the Departments of Aerospace Engineering, Astronomy, Biophysics and Statistical Physics, Chemical Engineering,

Chemistry, Computer Science, Ecology and Evolutionary Biology, Geological Sciences, Materials Science and Engineering, Mathematics, Philosophy, Psychology, Statistics 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 84 Associate Members from an even more diverse list of departments within and outside of Michigan. The membership list is given in Appendix C.

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 2008–2009, an estimate for the remainder of fiscal 2009-2010, as well as the projected budget for 2010-2011. The Director's state-of-the-center summaries are delivered annually at the Fall MCTP General Meeting. They are available on the web at: <http://www.umich.edu/~mctp/history.html>. Considerable additional information about MCTP activities and structure is available in the three year reviews, available at the MCTP website as well.

From the beginning of MCTP the college of LSA stated that its funding was seed money, and that it would need eventually to generate support from the rest of the university and outside. As other departments recognize the value of MCTP they have begun to contribute (currently 50k for three years), and discussions are beginning with the college of Engineering and OVPR.

Executive Committee member elections are held at the winter General Meetings. Alejandro Uribe (Interdisciplinary) will be replaced by Charles Doering. Michal Zochowski (Condensed Matter/AMO/Biophysics) will be replaced by David Lubensky. We would like to take this opportunity to thank Alejandro and Michal for their helpful advice and hard work and to welcome aboard Charles and David. Consistent with MCTP's broadening base and activities, as of July 1 Prof. Joanna Millunchick of Materials Science and Engineering will become MCTP Associate Director of Research. We want to thank Prof. Len Sander very much for his extensive contributions to the quality of MCTP as he leaves that position.

1.2 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 for ten years. So far this has brought in \$2,250,000 from the DOE (PIs Gordon Kane, Finn Larsen, and James Liu.) These MCTP matching funds (denoted Task T) are separate from, and in addition to, the regular high energy theory DOE grant. 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 fiscal year 2006 with the involvement of the LSA Development Office and other MCTP efforts. We have been excited to obtain a Visiting Committee, under the leadership of Stephen D'Arcy, composed of about 15

business and community leaders from Southeastern Michigan, who have agreed to help the MCTP achieve its goals and strengthen the MCTP financially. MCTP, the Physics Department, and LSA Development are planning a major fundraising event December 11, 2010, in conjunction with the dedication of Randall Laboratory as an American Physical Society Historical Site and a meeting organized by MCTP and the University of Michigan ATLAS group on first results from the CERN Large Hadron Collider. It is hoped this event will allow the establishment of an MCTP endowment fund.

1.3 Recruiting Impact

MCTP has had significant and growing impact on physics recruitment at all levels. According to James Wells, previous departmental Graduate Student Advisor, “the applicant pool of those wishing to do theoretical physics is quite strong and getting even stronger because of the MCTP.” Postdocs and junior faculty who accepted positions in the department, in a very competitive market, have stated that the opportunities provided by MCTP played a major role in their decision to join us. Last year eight young faculty composed a letter from which we quote “The MCTP played a very strong and very positive role in our coming to Michigan. In some cases the existence of MCTP was decisive in the selection of the University of Michigan ahead of other offers.”

1.4 Summer Schools

In the 1930’s and 1940’s a world-famous series of summer schools was held at the University of Michigan, with major impacts on both the development of frontier areas of physics, and on the quality of physics at the University.

A school on quantum information science was held June 16-27, 2008 directed by Luming Duan, Chris Monroe and Aaron Leanhardt. We look forward to the second school in this area in August 2010. We hope to eventually have schools every summer. Not only will these schools contribute to frontier areas of science, they will bring distinguished lecturers, leading students and recent PhDs here, which makes it more likely they can later be recruited, and that they will encourage their students, postdocs, and colleagues to come here.

2. Fiscal Year: 2008-2009

2.1 Conferences and Workshops

The MCTP held the following workshops and conferences in 2008-2009:

[Strings and Gauge Theories Workshop](#) September 15-26, 2008

Organizers: F. Larsen, J.T. Liu, L. Pando Zayas

[Causality, Analyticity, and Superluminal Propagation Workshop](#) Oct. 13-16, 2008

Organizers: R. Akhoury, A. Vikman, G. Shiu

[LHC and Dark Matter Workshop 2009](#) January 6-10, 2009

Organizers: G. Kane, K. Freese, A. Pierce, S. Watson, J. Lykken, P. Binetruy, F. Gianotti, M. Spiropulu

[Great Lakes Strings Conference](#) April 3-5, 2009

Organizers: F. Larsen, J. Liu, L. Pando Zayas, S. Cremonini

[Workshop on Atomic Physics with Rare Atoms](#) June 1-3, 2009

Organizers: Tim Chupp, John Behr, Georg Bollen, Zheng-Tian Lu, and Paul Mantica

2.2 Visitors

Individual short and long term visitors included:

Sasha Dolgov (Niels Bohr Institute) – Akhoury

Massimo Meneghetti (Observatory of Bologna) – Evrard, Rasia

Pasquale Mazzotta (Rome and Harvard's Center for Astrophysics) – Evrard, Rasia

Stefano Borgani (ICTP, Trieste) – Evrard, Rasia

Klaus Dolag (MPA, Garching) – Evrard, Rasia

Bobby Acharya (ICTP, Trieste) – Kane, Pierce

Paolo Gondolo (University of Utah) – Freese

Douglas Spolyar (UCSC) – Freese

Pearl Sandick (University of Texas) – Freese

Giovanni Russo (University of Catania, Italy) – Smereka

Valya Zakharov (Max Planck Institute, Germany) – Akhoury

Eshel Ben-Jacob (Tel Aviv University) – Zochowski

Michael Cai (Institute of Astronomy and Astrophysics, Academia Sinica) – Adams

E. Susana Lizano Soberon (UNAM) – Adams

Dunja Fabjan (University of Trieste) – Evrard, Rasia

Kerim Suruliz (ICTP) – Kane

Lilliana Velasco-Sevilla (ICTP) – Kane

William Kinney (University at Buffalo) – Freese

Frank Wilczek (MIT) – Kane

The MCTP also supported the following visitor programs:

Young High Energy Theorists Visitor Program

A Special Year of Mathematical String Theory Visitor Program
 Theory and Simulation in Molecular Physics Seminar Series
 Astronomy Theme Semester Marquee Lecture Series

2.3 Successful Proposals 2008-2009

The MCTP Executive Committee received 24 proposals for various scientific activities and, after careful consideration the following were approved for the amounts shown:

Workshops and Conferences:

<i>Great Lakes Strings Conference, April 2009</i>	MCTP-09-02	Liu, Cremonini, Larsen, Pando Zayas	\$ 15,000
<i>Strings and Gauge Theories 2 week workshop</i>	MCTP-09-03	Liu, Larsen, Pando Zayas	Extension
<i>CASP 2008 (Formerly The Cosmology of field theory actions)</i>	MCTP-09-07	Akhoury, Shiu, Vikman	\$ 9,000
<i>LHC and Dark Matter, January 6-9, 2009</i>	MCTP-09-11	Freese, Kane, Pierce, Watson, Wang, Lykken, Binetruy, Gianotti, Spiropulu	\$ 15,000
<i>Prospects for Cluster Cosmology Conference</i>	MCTP-09-14	Huterer, Evrard, McKay, Akerlof, Bregman, Freese, Gerdes, Gnedin, Oey, Pierce, Richstone, Tarle'	\$ 20,000
<i>Michigan Quantum School</i>	MCTP-09-16	Duan, Leanhardt, Monroe	\$ 10,000
Workshop and Conference Total			\$ 69,000

Visitors:

<i>Young High Energy Theorists Visitor Program</i>	MCTP-09-01	Liu, Cremonini, Larsen, Pando Zayas	\$ 20,000
<i>Star Formation and the Initial Mass Function</i>	MCTP-09-06	Adams	\$ 5,000
<i>Dolgov, Sasha Visit Extension</i>	MCTP-09-08	Akhoury	Extension
<i>Meneghetti/Mazzotta/Fabjan Visit May 2008</i>	MCTP-09-09	Rasia, Evrard	\$ 2,400
<i>Borgani & Dolag Visit and D. Fabjan</i>	MCTP-09-10	Rasia, Evrard	\$ 2,400
<i>Acharya Visit for 2 mo. 2009</i>	MCTP-09-12	Kane, Pierce	\$ 8,000
<i>Gondolo & Spolyar Visit 1 mo.</i>	MCTP-09-13	Freese	\$ 5,000

<i>Russo, Giovanni Visit for Collaborative Research</i>	MCTP-09-15	Smereka	\$ 3,500
<i>Ben-Jacob and Dzakpasu Visit</i>	MCTP-09-17	Zochowski	\$ 6,000
<i>A Special Year of Mathematical String Theory Visitor Program</i>	MCTP-09-19	Kriz, Pando Zayas	\$ 10,000
<i>Visitor program support</i>	MCTP-09-20	Bloch, Pando Zayas	Extension
<i>MCTP Summer Series of Several Lectures</i>	MCTP-09-21	Wells, Flacke	\$ -
<i>Theory and Simulation in Molecular Physics Seminar</i>	MCTP-09-22	Dunietz, Geva, Brooks	\$ 7,500
<i>Spolyar Visits</i>	MCTP-09-23	Freese, Liu	\$ 3,500
Visitor Total			\$ 73,300

The total of funds allocated through proposals was \$148,300. The full budget is given in the following section.

2.4 2008-2009 Budget (actual)

For the fiscal year ending June 30, 2009

Income

LS&A allocation (including non-Physics departmental)	\$215,000
Physics allocation	\$250,000
Return funds 07-14 Micro to Macro workshop	\$20,000
Surplus from FY08	\$22,480
MCTP apartment (Non-MCTP Income)	\$300
Total income	\$507,780

Expenses †

Staff salaries and benefits	\$75,267
Director administrative differential	\$8,500
Computing, office supplies, postage, telephone	\$26,000
Discretionary funds (fundraising, hosting, coffee, supplies, etc)	\$13,000
MCTP apartment (rental & cleaning)*	\$16,020
Conferences, workshops & summer schools	\$69,000
Visitors and seminar programs	\$73,300
Other proposal funding (Legato computer cluster)	\$15,900
Outreach and public lectures	\$6,000
Graduate student fellowships	\$114,000
Teaching fellowships	\$15,000
Total expenses	\$431,987

† Because of uncertainties associated with renewal of allocations the expenses were initially kept conservative.

*Cost savings of \$11,863 realized by 191 nights MCTP used the apartment (versus hotel hosting)

3. Fiscal Year: 2009-2010

3.1 Conferences and Workshops

The MCTP has held the following workshops and conferences in 2009-2010:

[Extreme Star Formation in Dwarf Galaxies Workshop](#) July 27-29, 2009

Organizers: O. Gnedin

[Shining Light on Black Holes](#) September 21-25, 2009

Organizers: R. Akhoury, A. Vikman

[Midwest Relativity Meeting](#) October 2-3, 2009

Organizers: J. Krisch, K. Riles, M. Hughes

[Indirect Detection of Dark Matter](#) October 8-10, 2009

Organizers: A. Pierce, G. Kane, K. Zurek

[Dark Stars Workshop](#) November 7-11, 2009

Organizers: M. Volonteri, K. Freese

[Spin Physics Symposium](#) November 14, 2009

Organizers: Lorenzon, Neal, Pierce, Uher, Wong, Siverts

[Micro Dark Matter Workshop](#) January 28-30, 2010

Organizers: A. Pierce, G. Kane, K. Zurek

[Michigan Conference on Topology and Physics](#) February 6-7, 2010

Organizers: I. Kriz, Y. Ruan, B. Bruner

[Effective Field Theory in Cosmology Workshop](#) March 10-14, 2010

Organizers: S. Watson, F. Larsen

[Connections to Dark Matter & LHC Data mini-workshop](#) April 7-10, 2010

Organizers: A. Pierce, G. Kane, K. Zurek

[MCTP Spring Symposium on Higgs Boson Physics](#) May 13-15, 2010

Organizers: A. Pierce, J. Qian, J. Wells

3.2 Visitors

Planned individual short and long term visitors included:

Eric Agol (University of Washington in Seattle) – Adams

Andrew Zentner (University of Pittsburgh) – Huterer

Alexander (Sasha) Dolgov (INFN in Italy) – Akhoury, Freese

Cedric Deffayet (APS in Italy) – Akhoury

Bobby Acharya (ICTP, Trieste) – Larsen, Kane, Zhou
 Salman Habib (Los Alamos) – Evrard
 Katrin Heitmann (Los Alamos) – Evrard
 Piyush Kumar (University of California) – Kane
 Sarah Shandera (Perimeter) – Huterer

The MCTP also supported the following visitor programs:
 Young High Energy Theorists Visitor Program
 Continuation of "A Special Year of Mathematics" Visitor Program
 Theory and Simulation in Molecular Physics Seminar Series
 Theoretical Biological Physics Luncheon Seminar Series
 Young Phenomenologist Visitor Program

3.3 Successful Proposals 2009-2010

The MCTP Executive Committee received 25 proposals for various scientific activities and, after careful consideration the following were approved for the amounts given:

Workshops and Conferences:

<i>Midwest Relativity Conference</i>	MCTP-10-01	Krisch, Riles, Hughes, Glass, Garfinkle	\$ 5,144
<i>3 Small Workshops- Dark matter, LHC Data, LHC Interpretation</i>	MCTP-10-03	Pierce, Kane, Zurek	\$ 5,000
<i>Effective Field Theory in Cosmology</i>	MCTP-10-04	Watson, Larsen	\$ 15,000
<i>Plasma Physics of the Intracluster Medium</i>	MCTP-10-07	Ruszkowski, Evrard,	\$ 14,000
<i>Conference on LHC First Data</i>	MCTP-10-10	Neal, Kane	\$ 10,000
<i>Shining Light on Black Holes</i>	MCTP-10-12	Akhoury, Vikman	\$ 16,000
<i>Extreme Star Formation in Dwarf Galaxies</i>	MCTP-10-13	Gnedin	\$ 12,000
<i>Dark Stars Workshop</i>	MCTP-10-15	Volonteri, Freese	\$ 7,000
<i>Advances in Percolation and Related Topics Meeting</i>	MCTP-10-20	Ziff, Sander, Kleban	\$ 20,000
<i>Michigan Quantum Summer School</i>	MCTP-10-24	Leanhardt, Duan	\$ 15,000
Conference Total			\$ 119,144

Visitors:

<i>Young phenomenologist's visiting program</i>	MCTP-10-05	Zurek, Kane	\$ 4,000
<i>Visitor Agol, Eric</i>	MCTP-10-08	Adams	\$ 2,500
<i>Visitor Zentner, Andrew</i>	MCTP-10-09	Huterer	\$ 1,500
<i>Continuation of "A Special Year of Mathematics" Visitor Program</i>	MCTP-10-14	Kriz, Pando Zayas	\$ 10,000
<i>Theory and Simulation in Molecular Physics Seminar</i>	MCTP-10-16	Dunietz, Geva, Brooks	\$ 9,000

<i>Visitors Dolgov and Deffayet</i>	MCTP-10-17	Akhoury, Freese	\$ 3,000
<i>Young High Energy Theorists Visitor Program</i>	MCTP-10-18	Liu, Larsen, Pando Zayas	\$ 8,000
<i>Visitor Acharya, Bobby</i>	MCTP-10-19	Larsen, Kane, Zhou	\$ 15,000
<i>Visitors Habib + Heitmann</i>	MCTP-10-22	Evrard	\$ 2,500
<i>Theoretical Biological Physics Luncheon Seminar Series</i>	MCTP-10-23	Zochowski, Sander, Lubensky	\$ 11,000
Visitor Total			\$ 66,500

The total of funds allocated through proposals is \$205,644. The full budget is given in the following section.

3.4 2009-2010 Budget (estimate)

For the fiscal year ending June 30, 2010

Income

LS&A allocation (including departmental)	\$185,000
Physics allocation	\$250,000
Surplus from FY09 (includes extra LSA allocation from 08-09)	\$75,793
MCTP apartment (Non-MCTP Income)	\$2,220
Total income	\$513,013

Expenses

Staff salaries and benefits	\$65,000
Director administrative differential	\$8,500
Computing, office supplies, postage, telephone	\$25,000
Discretionary funds (fundraising, hosting, coffee, supplies, etc)	\$15,000
MCTP apartment (rental & cleaning)*	\$16,200
Conferences, workshops & summer schools	\$119,144
Visitors and seminar programs	\$66,500
Other proposal funding	\$15,000
Outreach and public lectures	\$5,000
Graduate student fellowships	\$114,000
Teaching fellowships	\$15,000
Total expenses	\$464,344

*Cost savings of \$3,659 realized by 127 nights MCTP used the apartment (versus hotel hosting)

4. Fiscal Year: 2010-2011

4.1 Conferences and Workshops

The MCTP will hold the following workshops and conferences in 2010-2011:

[1st International Workshop on Bismuth-Containing Semiconductors: Theory, Simulation, and Experiment](#) July 14-16, 2010

Organizers: Joanna Millunchick and Shane Johnson

[2010 Michigan Summer School Program](#) August 1-13, 2010

Organizers: L. Duan, A. Leanhardt

[The Physics of the Intracluster Medium: Theory and Computation](#) August 23-25, 2010

Organizers: M. Ruszkowski and G. Evrard

[Single and double massive black holes in galaxies](#) August 30-Sept 2, or May 11, 2011

Organizers: Volonteri, Valluri, Gültekin, Gallo, Richstone

[Advances in Percolation and Related Topics Meeting](#) September, 2010

Organizers: Ziff, Sander, Kleban

[Cosmological Nongaussianity: Observations Confront Theory](#) September 22-25, 2010

Organizers: Huterer, Kadota, Shandera, Watson

[Non-Thermal Cosmological Histories of the Universe](#) October 18-21, 2010

Organizers: B. Acharya, R. Akhoury, D. Feldman, G. Kane, A. Pierce, S. Watson, K. Zurek

[Conference on LHC First Data](#) December 18-21, 2010

Organizers: Neal, Kane

[Numerical Relativity Beyond Astrophysics Workshop](#) February 2011 (Earliest)

Organizers: Akhoury, Garfinkle

[Direct Detection of Dark Matter Workshop](#) March or April 2011

Organizers: Zurek, Freese, Kane, Pierce

[Larryfest Conference](#) May 2011

Organizers: D. Baker, G. Belot, J. Joyce, L. Ruetsche, R. Batterman

[MHD and Star formation](#) May 2011 (Earliest)

Organizers: Adams, Bergin, Bloch, Calvet, Hartmann

4.2 Visitors

Individual short and long term visitors will include:

Salbreux (Max Planck Institute) 3 week visit – Lubensky

Ben-Jacob (Tel Aviv University) 2 week Visit – Sander, Zochowski

Vikman (NYU) 2 weeks and Deffayet (APC Lab, IAP) 3 weeks – Akhoury, Garfinkle

Sandick (University of Texas) 4 week visit – Zurek, Freese

The MCTP will support visitor programs:

Young High Energy Theorists Visitor Program

Continuation of "A Special Year of Mathematics" Visitor Program

Theory and Simulation in Molecular Physics Seminar Series

Theoretical Biological Physics Luncheon Seminar Series

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

4.3 Successful Proposals 2010-2011

The MCTP Executive Committee received 17 proposals for various scientific activities and, after careful consideration, has recommended the following for approval by the Physics Department:

Workshops and Conferences:

Larryfest Conference	MCTP-11-08	D. Baker, G. Belot, J. Joyce, L. Ruetsche, R. Batterman	\$	2,500
Michigan Quantum Summer School	MCTP-11-01	Leanhardt, Duan	\$	15,000
Bi-containing III-V semiconductors Workshop	MCTP-11-02	Millunchick	\$	15,000
Non-Thermal Cosmological Histories of the Universe	MCTP-11-03	Kane, Acharya, Akhoury, Feldman, Pierce, Watson, Zurek	\$	14,000
Cosmological Nongaussianity: Observations Confront Theory	MCTP-11-05	Huterer, Kadota, Shandera, Watson	\$	15,000
Numerical Relativity Beyond Astrophysics Workshop	MCTP-11-10	Akhoury, Garfinkle	\$	8,000
Single and double massive black holes in galaxies	MCTP-11-11	Volonteri, Valluri, Gultekin, Gallo, Richstone	\$	19,500
MHD and Star formation	MCTP-11-12	Adams, Bergin, Bloch, Calvet, Hartmann	\$	8,000
Direct Detection of Dark Matter Workshop	MCTP-11-16	Zurek, Freese, Kane, Pierce	\$	12,000

Workshop Total \$ 109,000

Visitors:

Vikman 2 weeks, Deffayet 3 weeks	MCTP-11-06	Akhoury, Garfinkle	\$	2,600
Salbreux 3 week visit	MCTP-11-14	Lubensky	\$	1,575
Ben-Jacob 2 week Visit	MCTP-11-15	Sander, Zochowski	\$	2,500
Sandick 4 week visit	MCTP-11-17	Zurek, Freese	\$	2,500
Continuation of "A Special Year of Mathematics" Visitor Program	MCTP-11-04	Kriz	\$	7,000
Continuation of "A Special Year of Mathematics" Visitor Program	MCTP-11-04	Pando- Zayas	\$	3,000
YHET Visitor Program	MCTP-11-07	Kane, Larsen, Liu, Pierce, Pando Zayas, Zurek	\$	16,000
Theory and Simulation in Molecular Physics Seminar	MCTP-11-09	B. Dunietz, E. Geva, C. Brooks	\$	5,040
Theoretical Biological Physics Luncheon Seminar Series	MCTP-11-13	Lubensky, Sander, Zochowski, Deegan	\$	4,170
Visitor Total			\$	44,385

The total of funds allocated through proposals is \$153,385. The full budget is given in the following section.

4.4 2010-2011 Budget (projected)

For the fiscal year ending June 30, 2011

Income†

LS&A allocation (including departmental)	\$121,000
Physics allocation	\$250,000
Surplus from FY10 (includes extra LSA allocation from 09-10)	\$48,669
MCTP apartment (Non-MCTP Income)	\$2,220
Total income	\$421,889

Expenses

Staff salaries and benefits	\$65,000
Director administrative differential	\$8,500
Computing, office supplies, postage, telephone	\$25,000
Discretionary funds (fundraising, hosting, coffee, supplies, etc)	\$15,000
MCTP apartment (rental & cleaning)*	\$16,200
Conferences, workshops & summer schools	\$109,000
Visitors and seminar programs	\$44,385
Other proposal funding	\$15,000
Outreach and public lectures	\$5,000
Graduate student fellowships	\$114,000
Teaching fellowships	\$15,000
Total expenses	\$432,085

*Cost savings of \$3,059 realized by 127 nights MCTP used the apartment (versus hotel hosting)

† Discussions are underway with additional LSA departments, the College of Engineering, and OVPR to generate new funding that replaces the original seed money from LSA which is being phased out. The MCTP gift fund contains about \$200,000 that can be used to cover operating expenses if the new funding arrival times generate a cash flow problem.

5. Acknowledgments

We would like to take this opportunity to thank the present and just past Executive Committee members, Dragan Huterer, Aaron Pierce, Charles Doering, David Lubensky, Alejandro Uribe and Michal Zochowski, as well as members of the other MCTP committees, for their wisdom and hard work, and to thank Len Sander for his valuable service as Associate Director for Research. We are particularly grateful to the MCTP secretaries Angela Milliken and Nicolle Wahla for their valuable work and support.

6. Appendices

A. Proposal

The original MCTP proposal may be found on the web:

<http://www.umich.edu/~mctp/history.html>

B. Bylaws

The MCTP bylaws may be found on the web:

<http://www.umich.edu/~mctp/bylaws.html>

C. Membership list

1. Full members

Name	Department
Adams Fred	Physics
Akerlof, Carl	Physics
Akhoury, Ratindranath	Physics
Allen, Jim	Physics
Amirdjanova, Anna	Statistics
Belot, Gordon	Philosophy
Berke, Joshua	Psychology
Berman, Paul	Physics
Bloch, Anthony	Mathematics
Bregman, Joel	Astronomy
Burns, Dan	Mathematics
Campbell, Myron	Physics
Chapman, Jay	Physics

Chupp, Timothy	Physics
Conlon, Joseph	Mathematics
Doering, Charles	Complex Systems
Dolgachev, Igor	Mathematics
Duan, Luming	Physics
Dunietz, Barry	Chemistry
Einhorn, Martin	Physics
Evang, Henriette	Physics
Estabrook, George	Ecology and Evolutionary Biology
Evrard, Gus	Physics
Federbush, Paul	Mathematics
Fornaess, John	Mathematics
Freese, Katie	Physics
Garikipati, Krishna	Mechanical Engineering
Gavini, Vikram	Mechanical Engineering
Gerdes, David	Physics
Geva, Eitan	Chemistry
Glotzer, Sharon	Chemical Engineering
Gnedin, Oleg	Astronomy
Hecht, Karl	Physics
Hughes, Philip	Astronomy
Huterer, Dragan	Physics
Jackson, Trachette	Mathematics
Kane, Gordon	Physics
Krasny, Robert	Mathematics
Krimm, Samuel	Physics
Krisch, Jean	Physics
Kriz, Igor	Mathematics
Larsen, Finn	Physics
Lewis, Robert	Physics
Liu, James	Physics
Lorenzon, Wolfgang	Physics
Lubensky, David	Physics
McKay, Timothy	Physics
Millunchick, Joanna	Materials Science and Engineering
Neal, Homer	Physics
Newman, Mark	Physics
Nori, Franco	Physics
Oey, Sally	Astronomy
Pando Zayas, Leopoldo	Physics
Pierce, Aaron	Physics
Raithel, Georg	Physics
Richstone, Doug	Astronomy
Riles, Keith	Physics

Roe, Byron	Physics
Rosenberg, Noah	Human Genetics,
Ruetsche, Laura	Philosophy
Ruszkowski, Mateusz	Astronomy
Sander, Leonard	Physics
Savit, Robert	Physics
Scheeres, Daniel	Aerospace Engineering
Sih, Vanessa	Physics
Simon, Carl	Public Policy
Smereka, Peter	Mathematics
Smoller, Joel	Mathematics
Spatzier, Ralf	Mathematics
Tarle, Greg	Physics
Tomozawa, Yukio	Physics
Uribe, Alejandro	Mathematics
Vandermeer, John	Ecology & Evolutionary Biology
van Keken, Peter	Geological Sciences
Veltman, Martinus	Physics
Volonteri, Marta	Astronomy
Watson, Scott	Physics
Wells, James	Physics
Williams, David	Physics
Wilson, Jessica	Philosophy
Winful, Herbert	Computer Science
Woolf, Peter	Chemical Engineering
Wu, Alfred	Physics
Yao, York-Peng(Edward)	Physics
Ziff, Robert	Chemical Engineering
Zochowski, Michal	Physics

2. Associate members

Name	Organization	Subject
Acharya, Bobby	ICTP/Michigan	Physics
Augustyn, Kenneth	SRI	
Baker, David	U of M, LSA	Philosophy
Bernstein, Joseph	Argonne National Laboratory	Astronomy
Bersano-Begey, Tommaso	U of M, Engineering	Electrical Engineering
Blechman, Andrew	Wayne State University	Physics
Blinov, Boris	University of Washington	Physics
Bobkov, Konstantin	Ohio State University	Physics
Bookstein, Fred	U of M, LSA	Biophysics, Biostatistics and School of Public Health

Bourjaily, Jacob	Princeton University	Physics and Mathematics
Bowen, Matt	US. Department of Energy	Physics
Brehob, Mark	U of M, Engineering	Electrical Engineering and Computer Science
Castro, Alejandra	McGill University	Physics
Cohen, Timothy	U of M, LSA	Physics
Cremonini, Sera	Cambridge University	Physics
Dai, Jian	The City University of New York	Physics
Demczyk, Brian	SynMat	
Dietrich, Jorg	U of M, LSA	Physics
Duff, Michael	Imperial College London	Physics
Dupke, Renato	U of M, LSA	Astronomy
		Mechanical
Falk, Michael	Johns Hopkins University	Engineering and Physics
	Maryland	
Farmany, Abbas	University of Ilam Iran	
Feldman, Daniel	U of M, LSA	Physics
Flacke, Thomas	Würzburg University	Physics
Flynn, Gordon	U of M, Pharmacy	Pharmaceutical Sciences
Ford, George	U of M, LSA	AMO Physics
Freeling, Rich	SRI International	
	Ann Arbor, Mi	
Fu, Hao	U of M, LSA	Physics
Garcia, Hector	U of M, Engineering	Electrical Engineering & Computer Science
Garfinkle, David	Oakland University	Physics
Gauthier, Christopher	U of M, LSA	Physics
Ghoshal, Gourab	U of M, LSA	Center for Study of Complex Systems
Glass, Edward	U of M, LSA	Physics
Grajek, Phillip	KEK, Japan	
Greenspoon, Arthur	U of M, LSA	Mathematics
Hao, Jiangang	U of M, LSA	Physics
Hayward, Christopher	Harvard-Smithsonian Center for Astrophysics	
Horja, Paul	Oklahoma State University	Mathematics
Ion, Patrick	U of M, LSA	Mathematics
Ji, Lizhen	U of M, LSA	Mathematics
Kadota, Kenji	U of M, LSA	Physics
	British University,	
Khalil, Shaaban	Center for Theoretical Physics, Cairo, Egypt	
Kieffer, John	U of M, Engineering	Materials Science & Engineering
King, Stephen	University of Southampton	

Krick, Jessica	IPAC/Caltech	Astronomy
Kuflik, Eric	U of M, LSA	Physics
Kumar, Piyush	University of California, Berkeley	Physics
Li, Yi	U of M, LSA	Physics
Li, Yixin	U of M, Medical School	Radiation Oncology
Lindner, Rudi	U of M, LSA	History
Linic, Suljo	U of M, Engineering	Chemical Engineering
Manna, Dylan	U of M, LSA	Physics
Marchesoni, Fabio	Loughborough University	Physics
Maxwell, Donald	U of M, LSA	Romance Languages & Literature
Mayer, Frederick J.	Mayer Applied Research, Inc.	
McNaughton, Brandon	U of M, Engineering	Biomedical Engineering
McRobbie, Porscha	U of M, LSA	Chemistry & Physics
Morrisey, David	Triumf	Physics
Mrenna, Steve	FNAL, Computing Division & Simulations Group	
Myrie, Kenute	U of M, LSA	Physics
Nord, Brian	U of M, LSA	Physics
O'Connell, Ross	U of M, LSA	Physics
O'Donnell, Tom	U of M, LSA	Science, Technology, & Society and Social Science
Ovshinsky, Stanford R.	Ovshinsky Innovation LLC	
Park, Juyong	Northwestern University /Center for Complex Network Research	Physics
Park, Minjoon	U of M, LSA	Physics
Petrov, Alexey	Wayne State University	Physics & Astronomy
Petrov, Nikola	University of Oklahoma	Mathematics
Phalen, Dan	U of M, LSA	Physics
Rangan, Chitra	University of Windsor	Physics, Chemistry & Biochemistry
Reid, David	University of Chicago	Physics
Rojo, Alberto	U of M, LSA	Physics
Ross, Marc	U of M, LSA	Physics
Ross, Matthew	U of M, LSA	Chemistry
Ryan, Marianne	U of M, School of Information	
Salmeen, Irving	U of M, LSA	CSCS
Sivers, Dennis	Portland Physics Institute	Physics
Smereka, Peter	U of M, LSA	Mathematics
Soparkar, Nandit	U of M, Engineering	Electrical Engineering & Computer Science
Stanek, Rebecca	U of M, LSA	Astronomy
Thornton, Katsuyo	U of M, Engineering	Materials Science & Engineering

Wilson, David	U of M, LSA	Physics
Zhou, Weiping	U of M, LSA	Program for Study of Complex Systems & Biostatistics

D. Committees

Executive Committee of the MCTP

- G. Kane (Director)*
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- D. Huterer (Astrophysics/Cosmology/Relativity)*
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- D. Gidley*

Undergraduate Research

- J. Wells (Chair)*

E. Publications

The list of publications may be found on the web:

<http://www.umich.edu/~mctp/PubPgs/publication.main.html>