

**Center for Condensed matter Sciences  
University of Florida**

**Five Year Center Report for 2013 – 2018**

May 2018

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**Name of the Center:** Center for Condensed Matter Sciences

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**A. Description of the Center**

The Center for Condensed Matter Sciences (CCMS) was evolved from the Center for Ultra-low Temperature Research (CULTR) which was established as a Type II interdisciplinary center in 1988. The Center is composed of approximately 26 faculty members with a broad spectrum of research interests from UF, National High Magnetic Field Laboratory, and 3 international institutions. CCMS uses returned overhead to provide research and educational resources to its members and students working in the condensed matter sciences.

**B. Activities in 2013 - present**

**(1) Promoting education and research for students**

**a. Undergraduate Research Fellowship**

Undergraduate Research Fellowship provides \$1000/semester (\$2000/year) to eligible undergraduate students to encourage early participation in frontline research in areas related to condensed matter sciences. The fellowship can be extended to the second year when documented evidence of progress and productivity is provided. This program supports 4 – 8 students per year. There are several undergraduate research programs on campus such as University Scholar Program and NSF funded REU Programs. However, most of these programs are limited to support for short term research experience. CCMS Undergraduate Research Fellowship allows sustained research activities for undergraduate students, which is important in producing meaningful results from the supported research.

The center has not done rigorous follow up on the students' progress or/and products of research supported by this program. It would be imperative to track these for the purpose of evaluating the program.

**2017 – 2018:** 6 Fellowships awarded

Christian Duarte, Carlos Perez, Rabon Marks, Vesta Zhelyaskova Rakin Baten, Jake Downing

**2016 – 2017:** 5 Fellowships awarded

Mario J. Tercero, Jennifer R. Crawford, Chase Yerger, Brodie Popovic, Cadee A. Hall

**2015 – 2016:** 8 Fellowships awarded

DeFurio, Gunther, Hendley, Otolora, Paul, Turiansky, Walker, Zhelyaskova

**2014 – 2015:** 5 Fellowships awarded

Cunningham, Hendley, Lewkowitz, McCarthy, Stainsby

**2013 – 2014:** 10 Fellowships awarded

Bessell, Bronnenberg, Edmonds, Kurz, Mancebo, McCarthy, Mirnazari, Viitaniemi, Murphy, Mueller

#### **b. CCMS graduate fellowship**

It has been recognized in recent years that the number of graduate students who intend to work in condensed matter sciences has diminished. This trend has non-trivial influence on the development of graduate students' research career as well as research capability of the CCMS members. CCMS initiated the Graduate Fellowship Program in 2006 to recruit outstanding graduate students and to jump-start their research career in condensed matter sciences at UF. This fellowship is offered to qualified 1st year graduate students during the summer after the first year. It provides full financial support including salary, tuition, and insurance. CCMS makes a concerted effort with the Graduate Admissions Committee to advertise this opportunity to the admitted students. In spring semester, the Executive Committee selects awardees for coming summer. The efficacy of this program needs to be reevaluated in coming years to maximize its role as a recruiting tool.

**2018 Summer:** 4 Fellowships awarded

Keegan Gunther, Taylor Miller, Mainak Pal, Suzanne Rosenzweig

**2017 Summer:** 2 Fellowships awarded

Yunpu Zhao, Vladimir Martinez

**2016 Summer:** 4 Fellowships awarded

Chen, Hu, Shakya, Yu

**2015 Summer:** 4 Fellowships awarded

Wenguang Jiang, Abhishek Kumar, Ang Li, Jihee Yang

**2014 Summer:** 5 Fellowships awarded

Zhu, Tokarski, VanGennep, Turvey, Liu

#### **c. CCMS graduate student travel assistance**

Travel to conferences, symposia and special research opportunities is essential to the academic and professional development of our graduate students. CCMS encourages graduate student travel by offering up to \$500 travel assistance for each research group of its member faculty per year. On average we have provided assistance to 2-3 students per year.

#### **(2) Promoting and funding seminars**

CCMS has provided partial support to speakers for the Condensed Matter Physics (CMP) Seminar and Colloquium. CCMS support is used to supplement the expense of the speakers. This program was introduced as a temporary relief for the reduced budget for the CMP Seminars and Colloquium in the Department of Physics. The center currently provides up to \$300 support for each speaker. The level of support will be reviewed by the Executive Committee for each fiscal year.

**(3) Promoting and funding major conferences in area of focus**

CCMS provided partial support for workshops and conferences organized by the members. This activity is consistent with the mission of the center and is an efficient way of bringing national and international recognition to the center and the University.

**2017 – 2018**

- Symposium on the Scientific Contributions of Guenakh Mitselmakher (GuenakhFest), Gainesville, FL (March 2018)
- The 14th International Bologna Conference on Magnetic Resonance in Porous Media (MRPM14), Gainesville, FL (February, 2018)

**2016 – 2017**

- CCMS Summer Lecture Series on Symmetry and Topology in Quantum Many Body Systems, Presented by Takeshi Mizushima (Osaka University, Japan), July 2016 in Gainesville FL

**(4) Public information source maintained:**

CCMS maintains its website at <http://www.phys.ufl.edu/ccms/>. The mission, member list, various research programs, fellowship awardees, and lecture notes for SLS can be found at this website.

**(6) Other miscellaneous activities:**

- CCMS provided 1/3 of the repair cost of the Haas Computer Numerically Controlled (CNC) machine in the Physics Machine Shop in 2017.

**B. Future Plans**

- CCMS hosts annual public lectures. This program will be coordinated with the departments involved in the center activities. Approximately \$2,000 each year will be allocated to cover travel expense and honorarium for the speaker.
- The center will renew its International Membership. The Executive Committee decided to modify the membership as External Membership to include scientists from institutions in North America not limited to foreign countries.
- For the past five years, the CCMS programs have grown and expanded substantially. In 2018 – 2019, the center’s annual budget is set to be balanced assuming \$40,000 IDC. The center plans to maintain 1 year operational balance to maintain financial stability for consistent center activities.

**C. Annual Budget**

	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018*
<b>Undergraduate Fellowship</b>	0.00	10281.00	16499.00	4992.00	7275.00
<b>Graduate Fellowship</b>	17664.00	36380.00	40298.00	20146.00	TBD
<b>Graduate Travel</b>	1900.00	2000.00	750.00	1500.00	TBD
<b>CCMS Seminars</b>	0.00	1855.00	0.00	1642.00	TBD
<b>Conf. &amp; Workshop</b>	4000.00	3591.00	3591.00	2552.00	1000.00
<b>Others**</b>			4000.00		
<b>Total</b>	<b>23564</b>	<b>54107</b>	<b>65138</b>	<b>30832</b>	<b>TBD</b>

\* Committed amount at the time of March 1, 2008.

\*\* Others include speaker support and miscellaneous items described in B(6).