

## CURRICULUM VITAE – Dr. RAFAEL M. FERNANDES

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### Academic Positions

- 2012 – present: Assistant Professor, University of Minnesota

### Education and Training

- B.S. in Physics, *State University of Campinas (Brazil)*, 2003
- M.Sc. in Physics, *State University of Campinas (Brazil)*, 2005
- Ph.D. in Physics, *State University of Campinas (Brazil)*, 2008
- Postdoc, *Ames Laboratory and Iowa State University*, 2008-2011
- Postdoc, *Columbia University and Los Alamos National Lab*, 2011-2012

### Research Output (as of 02/01/2016)

- Papers published in peer-reviewed journals: 67 (including 5 Nature Physics, 3 Nature Communications, 17 Physical Review Letters, and 7 Editors' Suggestions in Physical Review B)
- Total Citations: 2059 h-index: 24 (source: Web of Science)

### Highlights:

1) "Manipulation of gap nodes by uniaxial strain in iron-based superconductors." J. Kang, A. F. Kemper, and R. M. Fernandes, *Phys. Rev. Lett.* **113**, 217001 (2014).

2) "What drives nematic order in iron-based superconductors?" R. M. Fernandes, A. V. Chubukov, and J. Schmalian, *Nature Physics* **10**, 97 (2014).

2) "Nematicity as a probe of superconducting pairing in iron-based superconductors" R. M. Fernandes and A. J. Millis. *Physical Review Letters* **111**, 127001 (2013).

3) "Preemptive nematic order, pseudogap, and orbital order in the iron pnictides." R. M. Fernandes, A. V. Chubukov, J. Knolle, I. Eremin, and J. Schmalian. *Phys. Rev. B* **85**, 024534 (2012).

4) *Effects of nematic fluctuations on the elastic properties of iron arsenide superconductors*, R. M. Fernandes, L. H. VanBebber, S. Bhattacharya, P. Chandra, V. Keppens, D. Mandrus, M. A. McGuire, B. C. Sales, A. S. Sefat, and J. Schmalian. *Physical Review Letters* **105**, 157003 (2010).

5) “Competing order and nature of the pairing state in the iron pnictides” R. M. Fernandes and J. Schmalian. *Phys. Rev. B* **82**, 014521 (2010) – **Editors’ Suggestion; featured in the Virtual Journal of Applications of Superconductivity.**

### **Invited Talks:**

- 77 invited talks since 2008, including 5 lectures in international summer/winter schools for graduate students.

### **Graduate Students Advised**

- Xiaoyu Wang (2012-present)
- Tianbai Cui (2014-present)
- Ezra Day-Roberts (2014-present)
- Morten Christensen (2015; exchange student from the University of Copenhagen, Denmark)
- Dalson Eloy (2015-present; exchange student from the State University of Campinas, Brazil)

### **Postdoctoral Researchers Supervised**

- Dr. Jian Kang (2013-present)
- Dr. Michael Schuett (Humboldt Fellow; 2014-present)
- Dr. Peter Orth (2015-present)

### **Editorial and Review Activities**

- Referee for the journals: Science, Nature Physics, Nature Materials, Nature Communications, Science Advances, Physical Review Letters, Reviews of Modern Physics, Physical Review B, Physical Review X, Europhysics Letters, Applied Physics Letters, Journal of Applied Physics, Advanced Materials, New Journal of Physics, Superconductor Science and Technology, Journal of Physics: Condensed Matter, Scientific Reports, Journal of Magnetism and Magnetic Materials, European Physical Journal B.
- Reviewer of proposals submitted to the National Science Foundation, the Department of Energy, and the Israel Science Foundation.

### **Conference Organization**

- Member of the organizing committee of three international conferences since 2012.

### **Honors and Awards**

- 2015: McKnight Land-grant Professorship
- 2014: DOE Early Career Award
- 2012: APS-SBF Award for the Brazil-US Exchange Program
- 2010: ICAM Exchange Award

- 2006: *State University of Campinas 40 Years Award* for the highest overall GPA obtained in the history of the university (Area of Natural and Applied Sciences and Engineering).
- 2005: *Best M.Sc. Dissertation in Physics Award* at the State University of Campinas

**Outreach Activities:**

- Member of the *Physics Force*, a group formed by University of Minnesota professors and high school teachers, which performs physics demonstrations to students in the Twin Cities area (2013 – present).
- Co-organizer of the Brazilian program “*Physics During Vacations*”, aimed to high-school students coming mostly from low-income families (2004-2006).

**Funding:**

- *Competing Orders in Correlated Materials: Impact of Disorder and Non-Equilibrium Perturbations*. **DOE Early Career**. Principal Investigator. \$750,000 (07/2014–06/2019).
- *UMN Materials Research Science & Engineering Center*. **NSF – MRSEC**. Senior Investigator. \$18,000,000 (11/2014–10/2020).
- *McKnight Land-Grant Professorship*. **University of Minnesota**. \$50,000 (07/2015–06/2017).