

DEPARTMENT OF MOLECULAR AND CELLULAR BIOLOGY  
HARVARD UNIVERSITY

16 Divinity Avenue  
Cambridge, Massachusetts 02138



Biocomplexity Faculty Search Committee  
c/o Prof. Rob de Ruyter van Steveninck  
Department of Physics  
Indiana University, Swain Hall West 117  
Bloomington, IN 47405-7105

Dear Search Committee,

I am interested in applying for a faculty position in theoretical biophysics. Enclosed please find the application material, including my curriculum vitae with the list of publications and a brief summary of research plan. The letters of reference will be sent separately by individuals. Thank you very much.

Sincerely,

Chinlin Guo  
M.D. Ph.D.  
Harvard University

**Reference**

Professor Andrew W. Murray  
Molecular Cell Biology, Harvard University  
Tel: 617-496-1350. Fax: 617-496-1541. amurray@mcb.harvard.edu

Professor Erin O'Shea  
Biochemistry & Biophysics, HHMI, University of California, San Francisco  
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Professor Herbert Levine  
Physics, University of California, San Diego  
Tel: 858-534-4844. Fax: 858-534-7697. hlevine@ucsd.edu

Professor Terence Hwa  
Physics, University of California, San Diego  
Tel: 858-534-7263. Fax: 858-534-7697. hwa@ucsd.edu

Professor Shu Chien  
Bioengineering, University of California at San Diego  
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# Curriculum Vitae

Chin-Lin Guo

## PERSONAL

Name : ChinLin Guo  
Nationality : Taiwan  
Date of Birth : 17 January 1968  
Place of Birth : Tainen, Taiwan  
Languages : Chinese (mother tongue), English (fluent)

## ADDRESS

Department of Molecular Cell Biology, Harvard University  
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## EDUCATION

- 1997-2001: **Ph.D.**  
Physics/Biophysics, University of California, San Diego.  
Thesis: Collective molecular behavior on 2-dimensional biological system: receptor clustering &  $\beta$ -sheet aggregation.  
Advisor: Professor Herbert Levine.
- 1994-1996: **M.Eng.**  
Electrical Engineering, National Taiwan University, Taipei, Taiwan.  
Thesis: Ligand-independent calcium excitation modulated by nanometer-scaled optical force.  
Advisor: Professor Jyhping Wang.
- 1987-1994: **M.D.**  
Medical School, National Taiwan University, Taipei, Taiwan.

## POSITIONS HELD

- 2002-present: Helen Hay Whitney Foundation Fellow  
Research the self-organizing and nonlinear dynamics in yeast mating polarity formation by Experimentally and theoretically approach.  
Harvard University, Molecular Cell Biology, Cambridge, MA.
- 1997-2001: La Jolla Interface of Sciences Fellow  
Research the statistical mechanics and nonlinear dynamics of cooperative protein folding, functioning, aggregation, and collective cellular behavior.  
University of California, San Diego, La Jolla, CA.  
Teaching Assistant (2000)  
Assisted in the instruction of advanced graduate course (*Renormalization Group and Field Theory*).  
Instructor: Professor Terence Hwa).  
University of California, San Diego, La Jolla, CA.
- 1994-1996: Research Assistant  
Devised laser-optics instruments to probe sub-nanometer cellular behavior.  
Institute of Atomic and Molecular Sciences, Academia Sinica, Taipei, Taiwan
- 1993-1995: Internship and Residency  
Performed clinical duties and arrhythmia research.  
National Taiwan University Hospital and related local hospitals, Taipei, Taiwan.

**AWARDS**

2002-present: Helen Hay Whitney Foundation Fellowship.  
 1997-2001: Burroughs Wellcome Fund, La Jolla Interface of Sciences Fellowship.

**CONFERENCE CONTRIBUTIONS and INVITED TALKS**

- CL. Guo , M. Piel, and A.W. Murray. "The self-organizations in yeast polarity formation." *Mathematical Models in Signaling Systems*. Vanderbilt University, Nashville, Tennessee (2004).
- CL. Guo , M. Piel, and A.W. Murray. "The global and local control in yeast polarity formation." *American Society of Cell Biology annual meeting*. San Francisco, CA (2003).
- CL. Guo and A.W. Murray. "Yeast chemotropism: experiment and model" *Bio-molecular networks*. Kavli Institute for Theoretical Physics, UCSB, Santa Barbara, CA (2003).
- CL. Guo and A.W. Murray. "Switch-like response in yeast mating polarity formation." *American Society of Cell Biology annual meeting*. San Francisco, CA (2002).
- CL. Guo and A.W. Murray. "Bimodality in yeast mating polarity formation." Cornell University, Ithaca (2002).
- CL. Guo, H. Levine and D.A. Kessler. "Mechanisms underlying sequence-independent  $\beta$ -sheet formation." *Self-Perpetuating Structural States in Biology, Disease, and Genetics*. Proceeding of National Academics of Science, Sackler Colloquia, Washington DC (2002).
- CL. Guo, H. Levine and D.A. Kessler. "Mechanisms underlying sequence-independent  $\beta$ -sheet formation." *American Chemistry Society annual meeting*. San Diego, CA (2001).
- CL. Guo, H. Levine and D.A. Kessler. "Desolvation effect on  $\beta$ -sheet structural cooperativity: a new view on H-bond potential" *Biophysical Society annual meeting*. Boston, MA (2001).
- CL. Guo, H. Levine and D.A. Kessler. "How does molecular size and motif affect beta-architecture folding and aggregation?" *Protein Society annual meeting*. San Diego, CA (2000).
- CL. Guo, H. Levine and D.A. Kessler. "The kinetic competition between topology and heterogeneity in beta-hairpin folding." *LJIS 2000: QUANTITATIVE CHALLENGES IN THE POST-GENOMIC SEQUENCE ERA*. San Diego, CA (2000).
- CL. Guo, H. Levine and D.A. Kessler. "The roles of topology and heterogeneity in beta-hairpin folding." *Biophysical Society annual meeting*. New Orleans, LA (2000).
- CL. Guo and H. Levine "The thermodynamics in ligand-induced receptor clustering." *Biophysical Society annual meeting*. Baltimore, MD (1999).
- CL. Guo, C.H. Lee and J. Wang "The ligand-independent calcium excitation in nanometer mechanical perturbation." *Biophysical Society annual meeting*. Baltimore, MD (1999).

# LIST OF PUBLICATIONS

Chin-Lin Guo

1. CL. Guo, M. Piel, J. Jiang, and A.W. Murray. (2004) "The influence of self-organization on gradient detection." In preparation.
2. CL. Guo, M. Piel, and A.W. Murray. (2004) "The onset of self-organization in polarity formation." In preparation.
3. CL. Guo, M. Piel and A.W. Murray. (2004) "Dissecting multi-staged self-organization in polarity formation." In preparation.
4. CL. Guo, H. Levine and D.A. Kessler. (2002) "Mechanisms underlying sequence independent  $\beta$ -sheet formation." *Journal of Chemical Physics*, 116, 4353-4365..
5. CL. Guo and H. Levine. (2000) "A statistical mechanics model for TNFR1 signaling." *Journal of Biological Physics*. 26, 219-234.
6. CL. Guo, H. Levine and D.A. Kessler. (2000) "How does a  $\beta$  hairpin fold? Competition between topology and heterogeneity in a solvable model." *Proceedings of the National Academy of Sciences USA*. 97, 10775-10779.
7. CL. Guo, H. Levine and D.A. Kessler. (2000) "Two state behavior in a solvable model of  $\beta$ -hairpin folding." *Physical Review Letters*. 84, 3490-3493.
8. CL. Guo and H. Levine. (1999) "A Thermodynamic model for receptor clustering" *Biophysical Journal*. 77, 2358-2365.
9. C.H. Lee, CL. Guo and J. Wang. (1998) "Optical measurement of the viscoelastic and biochemical responses of living cells to mechanical perturbation." *Optics Letters*. 23, 307-309.
10. C.H. Lee, J. Wang and CL. Guo . (1998) "Nanometer imaging by differential confocal microscopy and its application in biology." *Proceedings of IEEE Engineering in Medicine and Biology Society*. 20, 1715-1718.

## REFERENCES

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