

Prior to SMU

† - Equal Contribution, # - First Theory Author

16. **D. I. G. Bennett**, K. Amarnath, S. Park, C. J. Steen, J. Morris, G. R. Fleming, "Models and Mechanisms of the Rapidly Reversible Regulation of Photosynthetic Light harvesting." *Open Biol.*, **9** 190043 (2019).
15. C. Chuang, **D.I.G. Bennett**, J. R. Caram, A. Aspuru-Guzik, M. G. Bawendi, J. Cao, "Generalized Kasha's Model: T-Dependent Spectroscopy Reveals Short-Range Structures of 2D Excitonic Systems. *Chem* **12** 3135 (2019)
14. **D.I.G. Bennett***, G. R. Fleming*, K. Amarnath*, "Energy-dependent quenching adjusts the excitation diffusion length to regulate photosynthetic light harvesting." *PNAS*, **115** E9523 (2018).
13. **D.I.G. Bennett***, P. Maly, C. Kreisbeck, R. van Grondelle, A. Aspuru-Guzik, "Mechanistic regimes of vibronic transport in a heterodimer and the design principle of incoherent vibronic transport in phycobiliproteins." *J. Phys. Chem. Lett.*, **10** 2665 (2018).
12. S. Blau†, **D.I.G. Bennett†**, C. Kreisbeck, G. Scholes, A. Aspuru-Guzik, "Local protein solvation drives direct down-conversion in phycobiliprotein PC645 via incoherent vibronic transport." *PNAS*, **115** E3342 (2018).
11. S. Doria, J. R. Caram, T. S. Sinclair, **D.I.G. Bennett**, C. Chuang, F. Freyria, C. P. Steiner, P. Foggi, K. Nelson, J. Cao, A. Aspuru-Guzik, S. Lloyd, M. G. Bawendi, "Photochemical Control of Exciton Superradiance in Light Harvesting Nanotubes." *ACS Nano*, **12** 4556 (2018).
10. K. Amarnath*, **D.I.G. Bennett***, A. Schneider, G. R. Fleming*, "Multiscale Model of Light Harvesting by Photosystem II in Plants." *PNAS*, **113** 1156 (2016).
9. J.J.J. Roden, **D.I.G. Bennett**, K. B. Whaley, "Long Range Energy Transport in Photosystem II." *J. Chem. Phys.*, **144** 245101 (2016)
8. **D.I.G. Bennett**, K. Amarnath, G. R. Fleming, "A structure based model of energy transfer reveals the principles of light harvesting in photosystem II supercomplex." *JACS* **135**, 9164 (2013).
7. S. J. McGurk, M. L. McKendrick, M. L. Costen, **D.I.G. Bennett**, J. Klos, M. H. Alexander, P. J. Dagdigian, "Depolarization of Rotational Angular Momentum in CN+Ar Collisions." *J. Chem. Phys.* **136**, 164306 (2012).
6. J. M. Dawlaty, **D.I.G. Bennett**, V. M. Huxter, G. R. Fleming, "Mapping the spatial overlap of excitons in a photosynthetic complex via coherent nonlinear frequency generation." *J. Chem. Phys.* **135**, 044201 (2011).
5. A. Khachatryan, P. J. Dagdigian, **D.I.G. Bennett#**, F. Lique, J. Klos, M. H. Alexander, "Experimental and Theoretical Study of Rotationally Inelastic Collisions of CN with N₂." *J. Phys. Chem. A* **113**, 3922 (2009).
4. B. L. J. Poad, P. J. Wearne, E. J. Bieske, A. A. Buchachenko, **D.I.G. Bennett#**, J. Klos, M. H. Alexander, "The Na⁽⁺⁾-H₂ cation complex: Rotationally resolved infrared spectrum, potential energy surface, and rovibrational calculations." *J. Chem. Phys.* **129**, 184306 (2008).
3. **D.I.G. Bennett**, L. J. Butler, H.-J. Werner, "Comparing Electronic Structure Predictions for the Ground State Dissociation of the Vinyloxy Radical." *J. Chem. Phys.* **127**, 094309 (2007).
2. M. J. Bell, K.-C. Lau, M. J. Krisch, **D.I.G. Bennett**, L. J. Butler, F. Weinhold, "Characterization of the Methoxy Carbonyl Radical Formed via Photolysis of Methyl Chloroformate at 193 nm." *J. Phys. Chem. A* **111**, 1762 (2007).
1. L. R. McCunn, **D.I.G. Bennett**, L. J. Butler, H. Fan, F. Aguirre, and S. T. Pratt, "Photodissociation of Propargyl Chloride at 193 nm." *J. Phys. Chem. A* **110**, 843 (2006).

Project Funding

Summary Statistics:	Total Amount	\$1,216,466
	Total Budget for Mesoscience Lab	\$426,466
	Number of Grants	3

Mesoscale quantum dynamics in new semiconductor materials

PI	Bennett
co-PI	–
Source of Support	Welch Foundation
Total award amount	\$240,000
Total award period	June 1, 2020 – May 31, 2023
Award Number	N-2026-20200401

Start-up Grant: Cyanobacteria light harvesting when iron is scarce

PI	Bennett
co-PI	Nir Keren, WE Moerner
Source of Support	Binational Science Foundation (BSF)
Total award amount	\$75,000
Total award period	Oct. 1, 2020 – Sept. 30, 2022
Award Number	2019330

NSF-BSF: High-resolution mapping of the protein landscape in plant photosynthetic membranes

PI	Helmut Kirchoff
co-PI	Bennett
Source of Support	National Science Foundation (NSF)
Total award amount	\$901,466 (Mesoscience Budget \$111,466)
Total award period	May 1, 2020–April 30, 2023
Award Number	1953570

Presentations

Talks

Virtual Conference on Theoretical Chemistry, (Zoom)	Invited	2020
Telluride Workshop, Telluride (USA)	[Invited, Canceled]	2020
McGill MiniScience Meeting, Montreal (CA)	[Invited, Canceled]	2020
American Chemical Society Spring Meeting, Philadelphia (USA)	[Canceled]	2020
Dept. of Chemistry, Midwestern State University, Wichita Falls (USA)	Invited	2020
Dept. of Chemistry, University of Texas, Dallas, Dallas (USA)	Invited	2019
Dept. of Biology, Southern Methodist University, Dallas (USA)	Invited	2019
Dept. of Chemistry, Angelo State University, San Angelo (USA)	Invited	2019
Dept. of Chemistry, LeTourneau University, Longview (USA)	Invited	2019
American Chemical Society Fall Meeting, San Diego (USA)		2019
Dept. of Chemistry, Southern Methodist University, Dallas (USA)	Invited	2018
Dept. of Chemistry, Duquesne University, Pittsburg (USA)	Invited	2018
Dept. of Chemistry, Colorado School of Mines, Golden (USA)	Invited	2018
Dept. of Chemistry, City University of New York, New York (USA)	Invited	2018
American Chemical Society Fall Meeting, Boston (USA)		2018
International Conference on Microbial Photosynthesis, Vancouver (CA)	Travel Award	2018
Dept. of Chemistry, University of Pennsylvania, Philadelphia (USA)	Invited	2018
Quantum Effects in Biology, Vilnius (LTU)		2018
Quantum Simulators Workshop, Eugene (USA)	Invited	2018
Eastern Regional Photosynthesis, Woods Hole (USA)		2018
Bio-Inspired Solar Energy Meeting, Toronto (CA)		2018
American Physics Society March Meeting, Los Angeles (USA)		2018
American Chemical Society Spring Meeting, New Orleans (USA)		2018
Dept. of Physics and Astronomy, VU University, Amsterdam (NL)	Invited	2017
Eastern Regional Photosynthesis, Woods Hole (USA)		2017
Dept. of Physics, University of Cyprus, Latsia (CY)	Invited	2017
Center for Quantum Bio-Sciences, Ulm (DE)	Invited	2017
Center for Excitonics, Annual meeting, Boston (USA)		2017

American Chemical Society Fall Meeting, Philadelphia (USA)		2016
Bio-Inspired Solar Energy Meeting, Vancouver (CA)		2016
Center for Excitonics, Annual meeting, Boston (USA)		2016
Quantum Simulators of Complex Molecular Networks, Oxford (UK)		2016
Bio-Inspired Solar Energy Meeting, Montreal (CA)		2016
Photosynthesis Gordon Research Conference, Boston (USA)	Invited	2015
IMHC, Dow Chemical Company, Midland (USA)	Invited	2013

Selected Posters (since 2015)

Eastern Regional Photosynthesis, Woods Hole (USA)		2018
Biophysical Society, San Francisco (USA)	Travel Award	2018
American Conference on Theoretical Chemistry, Boston (USA)		2017
Eastern Regional Photosynthesis, Woods Hole (USA)		2017
Excited State Processes, Santa Fe (USA)	Poster Prize	2016
Plant Biology Symposium, Cambridge (USA)		2016
Penn Conference in Theoretical Chemistry, Philadelphia (USA)		2016
Photosynthesis GRC, Boston (USA)		2015

Courses Taught

- **Graduate Quantum Mechanics** 2020
First semester graduate quantum mechanics taught out of a combination of Griffiths and Cohen-Tannoudji.

Service & Leadership

Grant Reviewer

- NSF Panel Reviewer (2019)
- DOE External Reviewer (2019, 2020)

Guest Editor

- Frontiers (2020)

Reviewer

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| <ul style="list-style-type: none"> • Nature Communications • Journal of the American Chemical Society • Journal of Physical Chemistry Letters • Chemical Science • Biophysical Journal | <ul style="list-style-type: none"> • Physical Review X • Physical Chemistry Chemical Physics • BBA - Bioenergetics • Frontiers • Quantum Science and Technology |
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