

To: Matt Cherry, President and Members of City Council

From: Wade Kapszukiewicz, Mayor

Subject: Appointment to the Environmental Protection and Climate Resilience Commission

5/18/2023

I Recommend the Following Appointment to the Environmental Protection and Climate Resilience Commission

Appointee	Appointee Replaced	Proposed Term of Office	Section 61 waiver as a special engagement	Reserved Slot / Type academic institution	Recommended by (if applicable)	Attendance Record	Resume attached
Randy J. Ellingson	new appointment	2 years, expiring 05/30/2025	yes		Mayor		yes



Wade Kapszukiewicz
Mayor

Biographical Sketch – Randy J. Ellingson, Ph.D.

Randy J. Ellingson, Professor of Physics
PVIC Endowed Chair in Photovoltaics
Department of Physics and Astronomy
University of Toledo, Toledo, OH 43600

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web: astro1.panet.utoledo.edu/~relling2/

A. Professional Preparation

Carleton College	Northfield, MN	Physics	B.A.	1987
Cornell University	Ithaca, NY	Applied Physics	M.S.	1990
Cornell University	Ithaca, NY	Applied Physics	Ph.D.	1994

B. Overview

Professor of Physics and Endowed Chair in Photovoltaics at UToledo, with a focus on teaching and research centered on the physics and materials science of photovoltaics – solar cells which generate electricity directly from sunlight. Broad knowledge of the field from R&D as well as industry perspectives, including hands-on experience in solar array design, public education and outreach, and solar energy financing.

C. Appointments

2019 – present: Wright Center Endowed Chair for Photovoltaics Innovation and Commercialization, UT
2015 – present: Professor, Dept. of Physics and Astronomy, The University of Toledo (UT), OH
2015 – 2016: Visiting Prof., PV-Lab at École Polytechnique Fédérale de Lausanne (EPFL), Switzerland.
2008 – 2015: Associate Professor, Dept. of Physics and Astronomy, The University of Toledo, OH
1997 – 2008: Senior Scientist, National Renewable Energy Laboratory (NREL), Golden, CO
1994 – 1997: Postdoctoral Associate, National Renewable Energy Laboratory (NREL), Golden, CO
2004 – 2005: Detailee to DOE Basic Energy Sciences, DMSE, Germantown, MD

D. Sample Publications from Scientific Research

More complete information available at:

https://scholar.google.com/citations?user=hv_6KwgAAAAJ&hl=en

1. Kamala Khanal Subedi, Adam B. Phillips, Niraj Shrestha, Fadhil K. Alfadhili, Anna Osella, Indra Subedi, Rasha A. Awni, Ebin Bastola, Zhaoning Song, Deng-Bing Li, Robert W. Collins, Yanfa Yan, Nikolas J. Podraza, Michael J. Heben, Randy J. Ellingson, “Enabling bifacial thin film devices by developing a back surface field using Cu_xAlO_y .” *Nano Energy* **83**, 105827 (2021).
2. Deng-Bing Li, Canglang Yao, S. N. Vijayaraghavan, Rasha A. Awni, Kamala K. Subedi, Randy J. Ellingson, Lin Li, Yanfa Yan, and Feng Yan, “Low-temperature and effective ex situ group V doping for efficient polycrystalline CdSeTe solar cells.” *Nature Energy* (2021).
3. Niraj Shrestha, Zhaoning Song, Cong Chen, Ebin Bastola, Xiaoming Wang, Yanfa Yan, and Randy J. Ellingson, “Charge compensating defects in methylammonium lead iodide perovskite suppressed by formamidinium inclusion.” *The Journal of Physical Chemistry Letters* **11**, 121-128 (2020).
4. Khagendra P. Bhandari Fadhil K. Alfadhili Ebin Bastola Suneth C. Watthage Zhaoning Song Geethika K. Liyanage Adam J. Phillips Michael J. Heben Randy J. Ellingson, “Very high Voc and FF

of CdTe thin-film solar cells with the applications of organo-metallic halide perovskite thin film as a hole transport layer.” *Prog Photovolt Res Appl.* **28**, 1024-1033 (2020).

5. Kamala K. Subedi, Ebin Bastola, Indra Subedi, Zhaoning Song, Khagendra P. Bhandari, Adam B. Philips, Nikolas J. Podraza, Michael J. Heben, and Randy J. Ellingson, “Nanocomposite $(\text{CuS})_x(\text{ZnS})_{1-x}$ Thin Film Back Contact for CdTe Solar Cell: Toward a Bifacial Device.” *Solar Energy Mat. and Solar Cells* **186**, 227-235 (2018).

E. Additional Activities:

1. **Founding Member of Glass City Community Solar, Inc., Treasurer 2017-2023, Technical and Education Coordinator 2017 - present:** Glass City Community Solar (GCCS) is a 501(c)3 charitable non-profit organization dedicated to serving the low income members of the public through the financial and educational benefits of siting solar PV arrays in these communities. GCCS was founded in 2017 by UToledo undergraduate students and other community members, and was one of 35 teams nationally to receive seed funding from the US Department of Energy. GCCS’s Mission: *To serve and educate the Toledo area community using solar energy in support of equitable sustainable development.*
2. **Teaching:** Co-development of PV Materials and Device Physics Laboratory courses at the University of Toledo. Graduate and undergraduate courses address development and application of measurement systems for characterization and understanding of fundamental properties of PV thin films and devices. Co-developed new graduate course, PV Performance Modeling to teach the physics, computational methods, and software for predicting PV generation dependence on siting, TMY data, array design, and inverter and module technology utilized.
3. **Editorial/Technical Assistance to U.S. DOE, as Detailee to BES/DMSE:** DOE Basic Energy Sciences Workshop on *Basic Research Needs for Solar Energy Utilization* (2005), including extensive editorial input in preparation of the Workshop Report.