**Lesson Plan: Lectures 25 & 26**

**Description**

The last two lectures, lecture 25 and lecture 26, allow students to explore safer chemical design and ADME through educational online computer game. The game encourages students to think like professional chemical designers and to develop a chemical product with respect to function and improved human and environmental health. The developed worksheet leads students through the game challenges and tests their understanding of the content as they progress through the game. The eight questions in the worksheet can be used as an individual assignment or as an in-class discussion. These questions are designed to be answered as students play the game.

**Prior to Lecture**

Required Readings:

* Karolina E. Mellor, Philip Coish, Bryan W. Brooks, Evan P. Gallagher, Margaret Mills, Terrance J. Kavanagh, Nancy Simcox, Grace A. Lasker, Dianne Botta, Adelina Voutchkova- Kostal, Jakub Kostal, Melissa L. Mullins, Suzanne M. Nesmith, Jone Corrales, Lauren Kristofco, Gavin Saari, W. Baylor Steele, Fjodor Melnikov, Julie B. Zimmerman & Paul T. Anastas (2018) The safer chemical design game. Gamification of green chemistry and safer chemical design concepts for high school and undergraduate students, Green Chemistry Letters and Reviews, 11:2, 103-110, DOI: 10.1080/17518253.2018.1434566

<https://www.tandfonline.com/doi/abs/10.1080/17518253.2018.1434566>

**Topics to Cover in Lecture – See Module 10 Safer Chemical Design Worksheet**

* ADME (Absorption, Distribution, Metabolism Excretion)
* Relate and predict physicochemical properties and the impact they have on ADME

For additional information on these topics, please refer to Lectures 21-24.