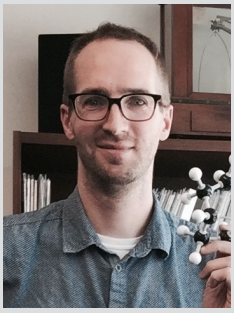
Young Career Focus: Professor Alexander J. Grenning (University of Florida, USA)

Background and Purpose. SYNFORM regularly meets young up-and-coming researchers who are performing exceptionally well in the arena of organic chemistry and related fields of research, in order to introduce them to the readership. This Young Career Focus presents Professor Alexander J. Grenning (University of Florida, USA).

Biographical Sketch



Prof. A. J. Grenning

Alex Grenning is from the northern suburbs of Chicago (USA). He received his B.A. degree from Lake Forest College (USA) under the research supervision of Dr. William B. Martin in 2007. He received his Ph.D. in Chemistry in 2012 from the University of Kansas (USA) under the guidance of Professor Jon A. Tunge where he developed various decarboxylative and deacylative allylation reactions. In 2012, he moved to Boston University (USA) to work with Professor John A. Porco on complex molecule synthesis, most notably the development of new routes to polyprenylated acylphloroglucinol (PPAP) natural products and analogues. Alex's independent career began in the summer of 2014 when he joined the faculty in the Department of Chemistry at the University of Florida in Gainesville (USA).

His broad research goal is to simplify complex molecule synthesis through the invention of novel chemical methodologies and strategies and to discover natural product based chemotherapeutics.

Other interests include rock n' roll, guitars, record collecting, microbrews, billiards, long boarding, biking, and of course, entertaining his little girls (~3 years old and ~1 year old as of June 2017).

- Visit the Grenning Lab homepage: www.grenninglab.com
- Follow Alex on Twitter: OChem_Grenning

INTERVIEW

SYNFORM *What is the focus of your current research activity?*

Prof. A. J. Grenning My group's overall research goal is to simplify access to complex terpenoid natural products and analogues. To do this, we are developing methods to multifunctionalize Knoevenagel adducts.

SYNFORM *When did you get interested in synthesis?*

Prof. A. J. Grenning It was while participating in the "Molecule of the Semester" meetings held jointly between the Tunge, Hanson, Aube, and other labs at The University of Kansas. I believe these meetings have their origin from Professor Trost's group: Student teams devise total synthesis plans, present their ideas, and then get eaten alive by the faculty! It was challenging, but I learned a lot and it got me hooked on synthesis!

SYNFORM *What do you think about the modern role and prospects of organic synthesis?*

Prof. A. J. Grenning *De novo* synthesis is often the only method to get a hold of certain bioactive natural products and their analogues. We must continue to become more proficient at complex molecule synthesis.

SYNFORM *Your research group is active in the area of synthetic methodology and bioorganic/medicinal chemistry. Could you tell us more about your research and its aims?*

Prof. A. J. Grenning We are devising a simple and tunable platform for complex terpenoid natural product and analogue synthesis. By the nature of our goal, it must be achieved from inexpensive and abundant starting materials using simple

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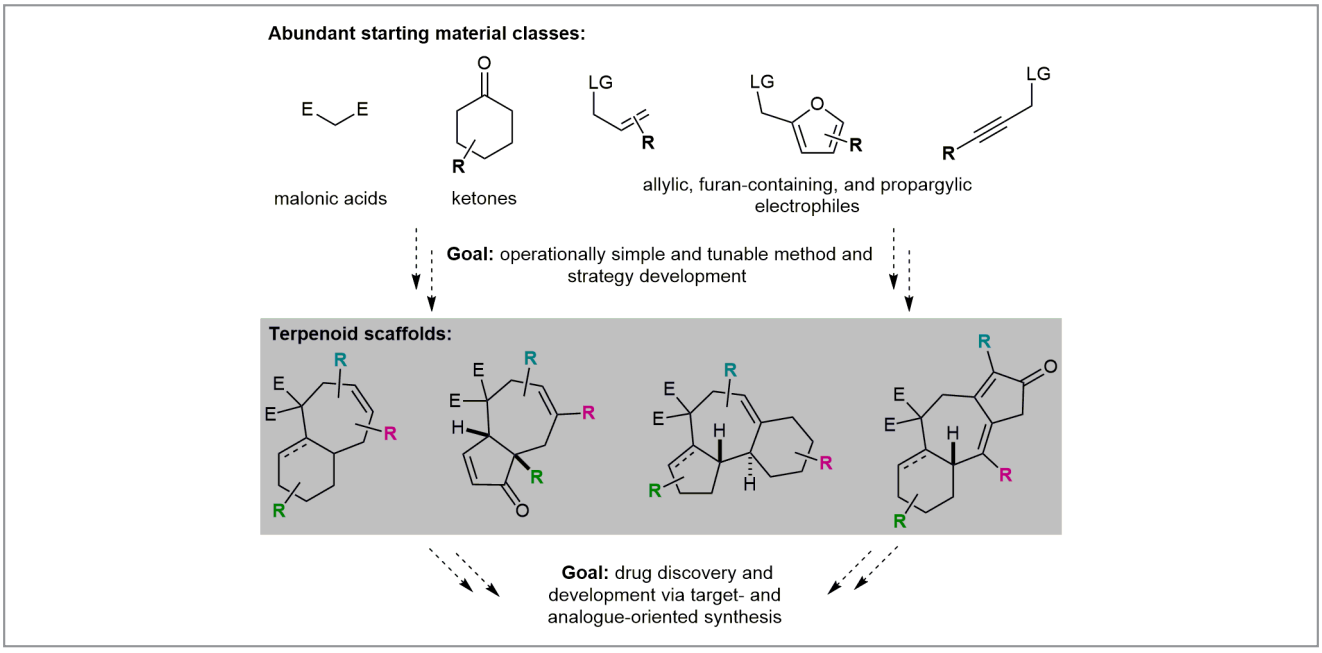

Figure 1

chemical transformations. Through our efforts, we will establish a synthetic platform for natural product and analogue synthesis that is user-friendly and therefore, hopefully, adopted by those interested in drug discovery.

SYNFORM *What is your most important scientific achievement to date and why?*

Prof. A. J. Grenning Although it can feel like "drops in the bucket," we are slowly but steadily making progress toward a "unified terpenoid synthesis strategy." I would recommend the following two papers as introductions to our research program:

(1) S. K. Scott, A. J. Grenning "An Enyne Cope Rearrangement Enables Polycycloalkane Synthesis from Abundant Starting Materials" *Angew. Chem. Int. Ed.* **2017**, *56*, 8125.

(2) O. Lahtigui, F. Emmetiere, W. Zhang, L. Jirmo, S. Toledo-Roy, J. C. Hershberger, J. M. Macho, A. J. Grenning "Assembly of Terpenoid Cores by a Simple, Tunable Strategy" *Angew. Chem. Int. Ed.* **2016**, *55*, 15792.