SUMMARY
Dr. Wijtmans teaches BSc and MSc classes in synthetic medicinal chemistry. He uses Reaxys in his courses because he wants students to appreciate the breadth of synthetic literature, understand the importance of good information management and to have the skills to use such tools successfully in their later careers.
Dr. Maikel Wijtmans is an Assistant Professor in the Medicinal Chemistry group at the AIMMS Institute of the VU University Amsterdam, specializing in synthetic medicinal chemistry. He joined us to talk about how important it is to give students an early introduction to state-of-the-art information management tools such as Reaxys.

The value of Reaxys in education
Reaxys and other information management systems are familiar tools in research facilities, but they also have significant roles to play in education. Dr. Wijtmans believes that the earlier such software is introduced, the better.

Using Reaxys with BSc students
Dr. Wijtmans uses a straightforward exercise to introduce Reaxys during a practical course in the 2nd year of the BSc program. The students have to use molecular structures to find an article, but the idea of the exercise is not only practical. “It lets them see the importance of literature management. I want them to learn to find articles on their own but also to get a sense of the chemistry research that has already been done.”

Using Reaxys with MSc students
Dr. Wijtmans and his colleague Dr. Chris de Graaf have designed a more complex project during the Computational Design and Synthesis of Drugs course, which is a key part of the MSc program Drug Discovery and Safety. Student teams have to design a compound and then, after basic retrosynthesis classes, propose a synthesis for it. Finding a feasible route can be confrontational for the students, and Dr. Wijtmans says that it is an essential lesson.

“The students, who have a range of backgrounds within pharmaceutical sciences, have their design and they should use their own knowledge together with Reaxys to find literature precedents for their compound or similar compounds. They may discover that their design has a very low synthetic feasibility so that they have to go back to the drawing board. We want them to realize that compounds do not ‘drop from the sky’, but at the same time that the tools are there to help them in their retrosynthetic efforts.”

Extracting relevant information
Reaxys has proved particularly useful because it is comprehensive but does not overwhelm the students with information. Relevant results are extracted and presented clearly.

“As an organic chemist, what I like about Reaxys is the ability to do a search and immediately see (reagent) structures. I also like that patents are now fully incorporated and that procedural information can be extracted with one click, as it means that students do not have to go through a 100-page patent to find one procedure. Reaxys gives the option to get straight to the procedure of a patent, which is great for teaching purposes.”

“It’s very useful that Reaxys can be accessed from other locations so students can also work on their projects at home.”

– Dr. Maikel Wijtmans, Assistant Professor at the AIMMS Institute of the VU University Amsterdam
“It is important to introduce students to state-of-the-art search software early on. We use search software as early as during the second year of the undergraduate program. Students need to appreciate such software as the gateway to the extensive synthetic research efforts that have been done globally.”

– DR. MAIKEL WIJTMAS, ASSISTANT PROFESSOR AT THE AIMMS INSTITUTE OF THE VU UNIVERSITY AMSTERDAM

**A user-friendly gateway to chemistry**
Dr. Wijtmans also believes that his students are satisfied with Reaxys because it is so user friendly. He also appreciates the online training videos and the accessibility of the whole system.

“It’s very useful that Reaxys can be accessed from other locations so students can also work on their projects at home.”

**Conclusion**
Ultimately, Dr. Wijtmans is satisfied with Reaxys because it gives his students knowledge and skills that they will need in their careers.

“Reaxys is used at many research institutions and in industry as well. Students that will specialize in synthetic medicinal chemistry need to know Reaxys so that they can show their familiarity with it. But all participants benefit regardless of their specialization within pharmaceutical sciences. At the end of the course, everybody should have a feeling about what’s out there and how challenging it can be to make new molecules. That’s a success to me. Reaxys is doing what I need it to do for my teaching.”
LEARN MORE

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