SUMMARY
Western Connecticut State University serves as an accessible, responsive and creative intellectual resource for the people and institutions of Connecticut. This public university has a diverse student body receiving a broad education. Its chemistry department was established as part of the physical sciences division in 1903, but it has been an independent department since 1958. WCSU recognizes that chemistry is a core science, essential to a whole range of research areas.

CASE STUDY
Reaxys®
Prof. Forest Robertson, Assistant Professor at WCSU

“Reaxys bolsters the chemical literacy of our students”
“Reaxys is so much more comprehensive than the alternatives — that’s why I wanted my students using it.”

– Prof. Forest Robertson, Assistant Professor at WCSU

Professor Forest Robertson has been a full-time assistant professor at WCSU since September 2014, having been an adjunct there for two years. He believes that young chemists should be taught to use research informatics solutions such as Reaxys early in their careers, both to improve their chemical literacy and to show them smarter ways to do research. Professor Robertson agreed to explain how he uses Reaxys to further educational goals.

Why did you pursue a career as an educator?

I love teaching. I love seeing my students’ eyes light up when they grasp difficult concepts. It’s such an honor to take part in the education of another individual. I was fortunate enough to have been able to teach while I was doing my Ph.D. at Dartmouth, and I knew then that I wanted to focus on education.

Would you say that education is your main role at Western Connecticut State University?

Yes. I spend in excess of 60 hours per week on teaching — that includes lectures and labs, office hours and the time I spend researching lecture material and grading papers.

Is researching lecture material your main use for Reaxys?

No, Reaxys is integrated into my courses — it’s not just a resource for me. I really want my students to be familiar with Reaxys. I train my sophomore organic chemistry students and research students on how to use Reaxys and then let them run with it.

For the first semester of organic chemistry, I have the students use Reaxys regularly to look up chemical properties. It helps them understand research informatics and increases their knowledge about how properties relate to each other.

In the second semester, I give them an unknown compound to identify. Reaxys is integral to their success during this portion of their lab work. The students begin by performing thin-layer chromatography to determine the purity of their compound. If their unknown compound is not pure, they must purify it. Next, they have to determine the elements that form the structure of their unknown via a sodium fusion test. They then have to work out the molecular formula, perform NMR, IR, and so on. They need to cross-check their data with data obtained from Reaxys for the compound that they believe is their unknown.

Finally, the students use Reaxys to look up reactions that can be performed on their unknown compound and eventually choose a derivative that they want to make. If they’ve predicted the structure of the unknown compound correctly, then they will be able to make the derivative and confirm its identity using melting point and spectroscopic data. Reaxys helps them find the safest and smartest synthetic methods for their chosen derivative. Once the students have synthesized their chosen derivatives, they can compare melting...
points and other properties to determine if the derived compound is the one they expected. If it is, then they have correctly identified their unknown compound. If not…back to the drawing board!

**Do the students use Reaxys in the lab to find all that information?**

I have my students do all of this research outside of lab so that they can effectively use their lab time to perform the wet chemistry. However, Reaxys is also available in the lab if they need to check anything.

**Did you look at other research informatics solutions for your program?**

I’ve used all of the available products, and I find that Reaxys is so much more comprehensive than the alternatives — that’s why I wanted my students using it. I used it during my graduate studies at Dartmouth and it was an incredible resource for me. The amount of material information you can access is voluminous. Whatever data I needed — from new projects, from old experiments — I always went to Reaxys first and I always found what I was looking for.

When I came to Western Connecticut State University, I requested that we procure Reaxys and both the library and faculty were amenable to the idea.

**Do students have any difficulties getting used to Reaxys?**

It’s actually very intuitive and I haven’t had any complaints from any of my students.

**How would you sum up the importance of Reaxys to education?**

Reaxys bolsters the chemical literacy of our students. Including it in the undergraduate program is the smart thing to do. Graduate work requires knowledge of such research informatics solutions. We’re giving our undergraduates a head start by teaching the skills they’ll need to succeed when they go on to further study.
LEARN MORE

To request information or a product demonstration, please visit elsevier.com/reaxys or email us at reaxys@elsevier.com.

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