



SEEKING: Postdoctoral Researcher in Synthetic Organic Chemistry

Overview: The [Trant Team](#) at the University of Windsor is looking for a postdoctoral fellow, 1-year renewable indefinitely based on satisfactory performance at \$40,000-50,000/year dependent on expertise (with the potential of a raise in subsequent years). The candidate must have significant experience (from their doctoral work, industrial career, or previous postdoctoral work) in multi-step small molecule synthesis, ideally total synthesis of natural products or of artificial compounds of similar stereo and functional complexity. The candidate must have experience in planning, troubleshooting, and executing synthetic routes. Expertise in medicinal chemistry, process chemistry or analytical chemistry and/or separation science is highly desirable. Expertise with biological assays is preferred but by no means necessary. **Individuals from under-represented groups are especially encouraged to apply. This includes ethnic, religious, sexual, disability, and gender minorities as well as first-generation university students (those whose parents do not hold university degrees). Individuals who have faced obstacles that have hindered their education and productivity are encouraged to apply and note their challenges in their cover letter:** to get this far, often you will have demonstrated exceptional perseverance and resilience. We see that. And we understand that it cost you time and productivity. We'll take that trade. We are looking for a good colleague with a demonstrated track record of strong problem solving and outstanding teamwork skills: a flashy CV full of top-journal publications is not necessary, please do not self-select out. The must-have requirements below are clearly stated, but beyond that we hire the person, not the CV. The position is expected to start as soon as filled. **THE PRIORITY DATE FOR APPLICATIONS IS April 15th 2022**, however the position will remain open until filled. We are looking to fill the position as quickly as possible. If you have come across this ad after that date on any forum other than the Trant Team website, please check the website to determine if we are still hiring for this position ([Join the Team Tab](#)).

Preference for Canadians and those able to legally work in Canada who are already in Canada: Unfortunately, due to COVID delays with the Government of Canada, strong preference is given to Canadian Citizens or Permanent Residents, or those with a valid Open Canadian Work Permit. Mexican and American candidates are given preference over other international candidates due to expedited review by the Canadian government. Ukrainian nationals are given special consideration. However, exceptional candidates with outstanding track records that meet the preferred qualities listed above from outside of Canada and the listed nations should still send an inquiry; we can wait for the perfect person.

About You: Position is open to individuals holding a PhD in chemistry or a related discipline. *Time since PhD graduation is irrelevant.* The successful candidate will have doctoral-level expertise in one or more of: total synthesis, methodology development, or medicinal chemistry. Comfort with multi-step organic synthesis, characterization using NMR and mass spec, and handling air- and moisture-sensitive reagents is required. A strong understanding of organic mechanism and reaction troubleshooting is required. Preference will be given for individuals with experience in structural determination and/or process chemistry experience. Ideally the candidate will have experience with scale-up chemistry and non-chromatographic separation science (although HPLC experience is an asset). Experience with asymmetric synthesis and characterization (chiral HPLC and/or diastereomer derivative generation) and heterocyclic chemistry is an asset. Individuals will be required to work closely with the biological, analytical

and computational teams as well as with other synthetic chemists. Previous experience in an interdisciplinary environment, or a **strong interest** in developing this experience will be preferred (and will likely make you happier in the position). A collaborative and team-focused philosophy is also required. All work is in teams, if you prefer to work alone on something, this is not the group for you.

About the Team: The Trant Team is located at the University of Windsor and uses synthetic, computational, analytical, and medicinal chemistry coupled with molecular and micro- biology to discover novel molecules that can be used to address under-examined biological processes and develop innovative diagnostic and therapeutic modalities for diseases. Except when we see something cool in supramolecular, organic mechanism, natural product and separation science, or physical organic chemistry that distracts us a bit. Then we do that too. We like doing research on cannabis, whisky, wine, and entheogens as well. The team is actively supported by NSERC, CIHR, the ACS PRF, the New Frontiers Program, the Arthritis Society of Canada and a myriad of other funding agencies and industrial partners (through MITACS, NSERC, and the Ontario Centre of Innovation, and through direct contracts) to provide a very significant operating budget. The lab currently hosts a frankly ridiculous 18 postdoctoral researchers, 16 graduate students, technical and administrative support, and a large team of undergrad researchers. This provides a unique highly multidisciplinary, highly intellectually stimulating environment. John provides extra support and training in project management and grant writing suitable for scientists looking for future leadership positions in industry, government, and/or academia. PDRs are strongly encouraged to collaborate with other members to advance new ideas and build on existing areas of research within the group, broadly spanning medicinal and materials science, small molecule drug design, peptide science, and the interactions of all of the above with biomolecules. They are also encouraged to build new networks outside the group, and to generate teams to accomplish personal and Team research goals. Within reason, and if the core mission is advancing, I am extremely willing to discuss, refine, and support with appropriate financial and personnel resources, ideas and new projects brought to me by team members. It's how we got into supramolecular chemistry, MRI, MOFs, cosmetics, and whisky in the first place. Wine and whisky research. I was already very much into whisky before starting the lab. The team operates a large synthetic chemistry, analytical chemistry, and computational chemistry facility, along with a biochemistry/molecular biology/microbiology/ bioprinting facility. We also have a dedicated Food Lab equipped with a rather large spray dryer and a high pressure homogenizer. This is supported by an in-lab suite of analytical tools to size particles, measure thermal and mechanical properties, and to image them. Departmental tools are available **including 5 NMR machines with limited use** (yes you can walk up and just USE and NMR machine at any time... suck on that, other places with your fully-booked calendars!) We collaborate extremely closely with cell biology, immunology, structural biology and tissue culture labs as well as with engineers, materials scientists, physicists, translational biologists, clinicians, and other synthetic and medicinal chemists both in Windsor, across the country, and around the world. We think we have more fun than all the other labs. But I think all labs think that. It's just that we are right.

About the Project: There is no set project. We are looking for a new team member who will assist the current efforts of the graduate students and the organic chemistry team on a large variety of synthetic and medicinal chemistry challenges. These could include artificial amino acid and carbohydrate synthesis; small molecule drug synthesis; late stage functionalization methodology

development of clinical candidates; innovative monomer generation for functional polymers; supramolecular chemistry (including host-guest biomolecule sensor and antiviral/antibacterial therapeutics, pseudo-rotaxanes, and controlled aggregation materials); process chemistry scale-up; catalysis methodology development; flow-chemistry and automated synthesis design; surface functionalization of self-assembled structures; and natural product total synthesis and analogue generation. Among other things. Central to our mission is the generation of new fields of research through collaboration with other personnel in the group with very different backgrounds. Currently, only one of the postdocs is a pure synthetic chemist; we have a second hired on basically this precise ad back in spring 2021, and a third in winter 2022 but they are trained as inorganic and peptide chemists respectively. We are still overwhelmed with projects, ideas, goals, students, and unwritten papers. **We need help.**

Depending on the career stage of the candidate, the role also involves graduate student supervision, industrial partner co-ordination, project management, grant writing, patent writing, and short seminar delivery (internal to the group). Training will be provided for any of these roles. The position will involve undergraduate student mentorship, small team and project leadership, and article writing.

About Windsor: The University of Windsor provides a stimulating and friendly working environment in the Southernmost, and warmest city of Eastern Canada, right next to Lake Erie. The towns of La Salle and Amherstburg, ranked as the safest places to live in Canada, are within a 10 to 20- minute drive. Windsor has the small-town charm but quick access to big-city amenities with the campus less than 10 minutes' drive from downtown Detroit. The cost of living is lower than in comparable University towns in Canada, meaning the salary stretches A LOT further than it would in Toronto, Montreal, Ottawa, Calgary, Edmonton or Vancouver, and the city is located in the middle of a wine-growing region, as well as being the historic centre for both whisky and beer production in Canada with many microdistilleries and microbreweries. The city is 28% foreign-born, making it one of the most culturally diverse cities in the country. This is reflected in both the restaurant and the food retail experience. The city is crisscrossed by recreational trails making an active outdoor lifestyle easy; although we lack hills. It is very flat. Great for biking.

About John: He wrote this. Mostly in the third person. The tone should really tell you all you need to know. He's an Assistant Professor without tenure yet (though he didn't forget to file the paperwork this year, so that's good) starting the lab in July 2016 at Windsor. He's published a bunch of papers, filed some patents, received a bunch of grants, and been awarded some certificates for research, teaching and mentorship. He focuses on mentorship, or at least really tries to. Specifics are on the website.

BSc in biopharmaceutical sciences (medicinal chemistry option) from UOttawa in 2006 (Honours thesis with William Ogilvie on organocatalysis and research with Natalie Goto on protein production for NMR structure analysis of membrane proteins); PhD UOttawa in 2012 with Robert Ben (carbohydrate total synthesis and ice recrystallization chemical physics); PDF with Tomas Hudlicky at Brock (total synthesis, methodology, chemoenzymatic synthesis) 2011-2012; PDF with Beth Gillies at Western (chemical engineering, polymer science, nanoparticle stuff, more synthesis) 2013-2016; PDF with Joe Gilroy at Western as a failed inorganic chemist and making nylon (2014-2015). Married with two cats, a dog, and a baby.

Contact: Interested individuals, please send a current CV (including contacts of three references) and a cover letter stating your research interest and career plan, and how your skill set matches that of the requirements, to Dr. John Trant at j.trant@uwindsor.ca with ONLY the term “Synthetic PDRA” in the subject line. Generic emails will not be responded to, nor will incomplete submissions. Competitive candidates will receive a rapid response for additional screening.

