



SEEKING: Postdoctoral Researcher in Formulation Science

Overview: The [Trant Team](#) at the University of Windsor, is looking for several postdoctoral researchers (PDR), 1-year renewable indefinitely based on satisfactory performance at \$42,000-45,000/year (with the option of a raise in subsequent years) based on relevant postdoctoral experience. The candidate must have significant experience (from their doctoral work, industrial career, or previous postdoctoral work) in analytical, nanoscience, formulation, medicinal, biophysics, or self-assembly chemistry, supervising undergraduate students (or entry level technicians), and ideally consulting with, and preparing reports for, industrial partners. In this position you will also be responsible for development and characterization of novel formulations of bioactive materials. The following are some of the key responsibilities:

- Operating/troubleshooting various instruments including mixers, homogenizers, spray dryers, and possibly analytical equipment (HPLC; GC; mass specs), and nanoparticle characterization instrumentation (thermal and mechanical analysis, sizing instrumentation)
- Develop novel formulations and evaluate stability, and processability
- Assist chemical engineers with industrial scale up of our lab-scale formulations
- Draft and review technical data, documents, and proposals as required
- Work closely in an interdisciplinary training and research environment including interacting with industrial partners.

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 30th 2022**, however the position will remain open until filled. We are looking to identify the candidate(s) as quickly as possible. Employment will start in summer 2022. 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. **The PhD must have been obtained SINCE August 2017.** The successful candidate will have

doctoral-level expertise in some form of soft nanoparticle science or a closely related discipline; self-assembly of lipids and amphiphilic compounds. Hands on experience with analytical instruments (HPLC-MS & GC-MS), troubleshooting and maintenance, discussions with instrument manufacturers, an ability to train new users, and an expertise in nanoparticle preparation and characterization is necessary. Awareness of the regulatory environment of the Cannabis industry in Canada, the principles and practice of Good Laboratory Practice and Good Manufacturing Practice, is a highly desirable. Prior industrial experience is preferred, especially experience in scaling up formulation science to the ton scale (or even at least several kgs-we know this expertise is very rare in our target applicant pool, this is highly desirable). Other skills, including analytical chemistry, biophysics measurements, synthetic organic chemistry, or bioinorganic chemistry are desirable. Individuals will be required to work closely with the analytical, synthetic, biological, natural product, and computational teams as well as with other formulation 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. This position will involve working closely with industrial partners and undergraduate/graduate students at different levels. 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. The team operates large synthetic chemistry, analytical chemistry, formulation chemistry, and computational chemistry facilities, 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.

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 Role: The position involves coordinating closely with an industrial partner both on their site and at the campus. It involves a variety of formulation techniques and it involves working closely with the business side of the company as well as the scientific and technical teams. The position, like all others in the group, also provides opportunities for the candidate to work on other projects within the Trant lab and to also pursue topics of mutual interest should time allow.

The position will involve undergraduate student mentorship, small team and project leadership, and article writing. Depending on the career stage of the candidate, the role will also involve 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 Trant lab encourages PDRs to pursue their other interests. As available, we will provide support from the other members of the group to develop and refine research ideas of the candidate. We hire for colleagues, not employees. We want you to innovate and pursue your interests.

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, 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 “Formulation 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.

