

Curriculum Developer and Teacher Educator

Job Summary

Northwestern’s Center for Connected Learning (CCL) and the NetLogo Center, both founded by Professor Uri Wilensky from the Northwestern Schools of Education and Engineering, are looking for a full-time Curriculum Developer and Teacher Educator. If you are passionate about science and the future of science education, this position is ideal for you! Professor Wilensky recently won the prestigious Yidan Prize, largely for his work on NetLogo, and you will be joining a small and dynamic team dedicated to building great tools and curricula for science and science education.

[NetLogo](#) is a free award-winning agent-based modeling (ABM) software used by educators and scientists around the world for modeling and understanding complex systems across the natural and social sciences. ABM is a way to explore systems by programming many individual “agents” (people, cells, firms, animals, etc.) to follow simple rules. As agents interact, larger patterns—like traffic jams, epidemics, or market cycles—emerge.

NetLogo is the most widely used software for ABM across research and education and has been used to help students learn about topics ranging from chemical reactions to economic systems, anything in which many individual parts interact to produce a larger pattern. To learn more, [watch an introduction to NetLogo in education](#) (6 min).

This position will focus on (1) improving and creating educational materials that use NetLogo (and related products) across STEM and social science subjects in middle and high schools , (2) creating and running teacher education workshops around using NetLogo and accompanying curricula, and (3) doing outreach to schools and teachers.

Occasional evening and weekend hours may be required.

Principal Accountabilities [GZ1] [GZ2] [GZ3]	% of Time in this activity	Essential Function (E) *
<p>1. Curriculum Development: <i>Curriculum compiling, organizing, and updating:</i> Many NetLogo-based curricula have been developed over the years as parts of research projects but they have not been polished and made widely available. The curricula include units on chemistry (chemical reactions, ideal gas laws), biology (evolution, ecosystems), physics (electrical current, gravitation), earth science (greenhouse effect), and social science (wealth inequality), all of which are based around NetLogo models of the relevant phenomena. One aspect of this position will be compiling, organizing and enhancing these curricula to make them widely available. This will include reformatting old curricula to be shareable on google docs and</p>	40%	

<p>other websites, updating out of date figures, editing the content, and organizing them on web-pages to be easily viewable and searchable.</p> <p>Curriculum creation and expansion: After existing curricula have been made available, we will want to identify the most fruitful directions for further curricular development across various disciplines and then create these curricula, likely in collaboration with other researchers or groups.</p>	
<p>2. Teacher Education</p> <p><i>Developing teacher education programs:</i> Making NetLogo curricula available is only useful if students and teachers get to use them. A major part of this role will be developing innovative and scalable teacher education workshops to help teachers learn how to effectively bring computational modeling into their classrooms using NetLogo. The workshops will include (1) using existing NetLogo models in the classroom to engage students in inquiry-based learning and (2) learning the basics of how NetLogo models work to then modify/customize them. The goal of the workshops is to help teachers get comfortable using NetLogo and then to give them the resources and opportunities to continue learning and improving their usage of NetLogo over time.</p> <p><i>Running teacher education programs:</i> you will also be responsible for helping to run teacher education workshops together with other staff. This will likely be primarily online to have greater reach. The cycle of developing and running teacher workshops will be used to improve them over time.</p>	40%
<p>3. School and Teacher Outreach</p> <p>The third main aspect of this role will be doing outreach to schools to recruit teachers to our teacher education programs. This includes cultivating relationships with schools and teachers and presenting at conferences.</p>	10%
<p>4. Other duties as assigned</p>	10%

Minimum Qualifications: (Education, experience, and any other certifications or clearances)

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| <ol style="list-style-type: none"> 1. Successful completion of a full 4-year course of study in an accredited college or university leading to a bachelor's or higher degree in a relevant field (natural science, social science, education, learning sciences, etc.) OR appropriate combination of education and experience. 2. Experience with designing educational materials and/or experiences |
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Minimum Competencies: (Skills, knowledge, and abilities.)

1. Passion for science and interest in how computational tools can transform scientific practice and education
2. Science content knowledge and excitement to learn more
3. Excitement to learn agent-based modeling using NetLogo
4. Passion for learning and education
5. Strong written and verbal communication skills
6. Ability to work both independently and collaboratively

Preferred Qualifications: (Education and experience)

1. Advanced degree (masters or PhD) in relevant field (natural science, social science, education, learning sciences, etc.)
2. Significant experience teaching science, social studies, or math
3. Significant experience developing instructional experience
4. Experience with designing educational technology or web-based learning tools. The ideal would be experience creating computational models for science education, but any experience designing educational technology is helpful.
5. Experience running educational workshops
6. Experience with K-12 school outreach or teacher recruitment

Preferred Competencies: (Skills, knowledge, and abilities)

1. Experience with computational thinking, computer science education, or simulation/modeling in educational contexts
2. Knowledge of NetLogo or other agent-based modeling tools
3. Familiarity with NGSS or other standards frameworks