



Center for the Study of Complex Systems (CSCS)

THE POWER

Late last century, a diverse group of scholars with a shared intellectual interest in topics ranging from cooperation and adaptation to networks and systems began meeting informally to share ideas under the broad rubric of complexity studies. Those meetings included luminaries such as Arthur Burks, John Holland, Douglas Hofstadter from Computer Science, Bob Axelrod and Michael Cohen from Political Science, Carl Simon from Economics and Mathematics, and William Hamilton from Biology. Those faculty members went on to great prominence winning MacArthur genius awards, being awarded Russell lectureships, and memberships in national academies. Their intellectual vision resulted in the creation of a formal center to study complexity.

Today, the Center for the Study of Complex Systems (CSCS) is an interdisciplinary program at the University of Michigan that encourages and facilitates research and education in the general area of nonlinear, dynamical, and adaptive systems. Its core and affiliated faculty represent nearly every college of the university. CSCS supports a diverse body of research, training, and educational initiatives. These include resources for agent-based modeling, a weekly seminar series, workshops, special events, and both an undergraduate minor and a Graduate Certificate Program.

THE OPPORTUNITIES

The Center for the Study of Complex Systems (CSCS) features an outstanding roster of faculty who continue the tradition and evolution of interdisciplinary and trans-disciplinary research. The Center also offers courses in complexity, networks, dynamics, and modeling in topics ranging from epidemiology and physics to public policy and sociology. Online courses by CSCS faculty have attracted nearly one-quarter of a million students. As part of its educational mission, CSCS runs a Graduate Certificate Program that attracts students from dozens of disciplines and a new undergraduate minor that attracts some of our brightest and most innovative undergraduate students.

THE IMPACT

To continue its tradition of excellence and build on its strengths, CSCS will focus on creating more fellowships to attract and retain the very best graduate students and post-doctoral scholars, as well as supporting research at all levels. The Student Innovation Fund will allow CSCS to enrich the graduate and undergraduate experience by supporting student groups to enhance the program's offerings with workshops, visiting lectures, and research projects.

Naming the Center for Study of Complex Systems (CSCS)

\$10M endowed / \$500,000 annually

A transformational gift to name the Center for the Study of Complex Systems would enable it to become a permanent part of the intellectual landscape at the University of Michigan. With funds for a full-time research scientist position to help undergraduates, graduate students, and faculty with their research, the Center would encourage and facilitate research and education. In addition, funding would support:

- CSCS Research support position: **\$1.5M endowed/ \$70,000 annually**
- One Holland-Burks Fellow: **\$1.5M endowed/ \$70,000 annually**
- Two graduate student fellowships: **\$1M each endowed/ \$50,000 each annually**
- Undergraduate research support: **\$1M endowed/ \$50,000 annually**
- Seed funding for innovative research projects: **\$4M endowed/ \$200,000 annually**

Burks-Holland Fellows

\$1.5M endowed / \$70,000 annually

Art Burks and John Holland were the two driving intellectual forces behind the Center. They advocated intensive interactions among small groups of diverse scholars as a method for scientific advancement. Burks-Holland Fellowships will be awarded to postdoctoral students who show exceptional promise to work across disciplines, and to visiting faculty.

Student Research Fund

\$50,000 to \$100,000 annually

To carry out their research, CSCS faculty rely on graduate and undergraduate student researchers. Some of these students perform hourly work while others devote entire summers or semesters to working on projects with faculty. These funds will be used to pay for undergraduate research opportunities and graduate research fellowships.

Student Innovation Fund

\$10,000 to \$50,000 annually

CSCS boasts two active student groups, one of graduate students and the other of undergraduates. Both groups supply ideas and energy for programs, speakers, seminars, online educational initiatives, and software. Gifts to the Student Innovation Fund would provide resources for students to improve CSCS from the bottom-up (as we say in the complexity sciences).

WAYS TO FUND YOUR GIFT

Your gifts of cash, pledges, or appreciated securities change lives. Wills, estate, and planned gifts allow you to create a lasting legacy that will enable the best and brightest minds to experience a liberal arts education, solve problems in a changing world, and yield ideas and innovations that will make a difference in Michigan and around the globe.

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