Center for The Study of Complex Systems (CSCS)

THE POWER

Three decades ago, 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. These faculty members have since gone on to great prominence winning MacArthur genius awards, being awarded Russell lectureships, and membership in national academies. Their intellectual vision resulted in the creation of a formal center to study complexity.

Our largest-ever fundraising campaign is ambitious, visionary, purposeful — worthy of the name “Victors.” The $400 million goal is built upon the cornerstone of the liberal arts: the idea that a powerful, pragmatic education can transform hearts and minds, can solve problems in a changing world, can yield ideas and innovation across every discipline. That’s why we are focused on raising money so that the best and brightest minds can have access to the College through robust scholarship support, no matter their financial circumstances. So too are we committed to helping every student acquire not just knowledge in the classroom, but experiences outside the academy including innovative entrepreneurial efforts and internships. We strive to support our faculty on the front-lines of research, and steward our planet, our community, our campus. To do all this, and so much more, the College needs you — because the world needs Victors.
Today, the Center for the Study of Complex Systems (CSCS) is an interdisciplinary program at the University of Michigan designed to encourage and facilitate research and education in the general area of nonlinear, dynamical, and adaptive systems. Its more than 50 participating faculty represent nearly every college of the University. The CSCS supports a diverse body of research, training, and educational initiatives. These include an active computer laboratory focused on 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 on support for 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.
CENTER PROGRAMING FUND
$50,000 to $100,000 annually

CSCS currently runs an annual University of Michigan-Santa Fe Institute complexity conference that takes on topics like innovation, emergence, and robustness, which attracts leading complexity scholars from around the globe. The Center also holds a weekly seminar series, hosts visitors, and runs small special event seminars on topics such as how to measure complexity, the future of agent based modeling, and how to distinguish skill from luck. Gifts for the Center programing fund would provide resources for these activities.

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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