

Consortium Report  
*Beyond the Boundaries of Scientific Discovery: A Colloquium for Undergraduates\**

Submitted by:  
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Justin Miles and Sean Poster [two former College of Biological Sciences (CBS) undergraduates] collaborated with Dr. Kathryn Hanna and the CBS Student Board to put together two colloquia directly aimed at engaging undergraduates in intellectually stimulating topics faced by these students during their future endeavors. We felt that many students, particularly within CBS, leave without enough knowledge of biology-related issues that face our society today. Therefore, our goal was to educate students about relevant issues that they will one day face in their career or as a member of society. To do so, we chose two topics that we thought would cover a wide range of interests, and also incorporate a broad range of hot topics from other fields. Those topics included growing population problems as they impact environmental issues and health disparities. With our focus squarely on these topics, we were able to bring in speakers from different backgrounds who were able to share their knowledge, perspectives, and suggestions to address these growing problems. Each colloquium allowed students the opportunity to ask the experts questions and fostered discussion.

Speakers were asked to direct their talks to undergraduates, as well as to demonstrate to them that they, too, could one day be pursuing research on these topics. The Consortium contributed the funds required to attract students that do not typically attend interdisciplinary seminars, which helped enrich the ensuing discussions. In addition to posting numerous fliers throughout the University, we were able to provide students with a “better-than-pizza” dinner and door prizes. Substantial discounts from the University Bookstores for the door prizes and two-for-one pricing from the local Chipotle restaurant helped us to ‘stretch’ our resources to cover our expenses. In the past we’ve learned that upgrading enticements to attend events helps to boost undergraduate involvement in programs. The Consortium support allowed us to attract excellent speakers from both outside and inside the University by funding an honorarium for the speakers in recognition of their efforts in the research and preparation for the colloquia. Without these funds, it would have been very difficult to organize and carry out the two events successfully.

**October 18, 2007 Colloquium:**

The colloquium on *Population and Environment: Piloting an Unstable World on a Steady Course* featured two University Professors, Ian Ross Macmillan and Clarence Lehman. Dr. Macmillan spoke on population studies and the need to look at the female fertility rate to track population trends. Dr. Macmillan highlighted extrapolated data sets from different countries to show how socioeconomic indicators relate to fertility rate. With a global trend toward a fixed fertility rate the presentation explored the downstream effects of how fertility rates feedback to shape socioeconomic factors. Dr. Lehman spoke on carbon in the atmosphere contributed by human populations and ways to reduce the carbon debt generated over the past 100 years. Dr. Lehman’s talk highlighted both data analysis and casual interpretation of extrapolated global changes. His talk was very optimistic, in that solutions exist, but it will require a revolution in both public policy and the way in which disciplines work together. Because the speakers communicated beforehand, the presentations complemented each other. The approximately 80 students (primarily undergraduates) responded well to their talks, and the question/answer/discussion session had many thought-provoking points.

**November 7, 2007 Colloquium:**

Approximately 100 students attended our second colloquium on *Health Care: The Have and Have Nots—Perspectives on Disparities*, where we asked a pediatrician and a child's health care lobbyist, Charles Oberg and Jim Koppel respectively to speak. The speakers had worked with each other before, therefore their remarks played off each other nicely. Dr. Oberg, a pediatrician and professor of epidemiology, concentrated his focus on infant mortality rates. He illustrated that the problem existed, but methods were and are being introduced that have helped improve the infant mortality rate. He also discussed the disparities currently plaguing this issue, and offered a couple of solutions. Mr. Jim Koppel from Children's Defense Fund Minnesota discussed the importance of good policy in order to provide adequate health care. He illustrated how difficult it can be to obtain health care, highlighting some of the current obstacles. Mr. Koppel emphasized the need for good public policy through interdisciplinary focuses and for students to get involved in the political process. Both speakers took many questions after the talk and were impressed with the level of thinking undergraduates had when formulating their questions. With the two speakers coming from different disciplines they did a nice job showing students how an interdisciplinary approach can help solve tough issues. In other words, students walked away with a unique understanding of how problems are interwoven among disciplines.

**Feedback:**

We asked students to fill out surveys at the conclusion of each colloquium, and we received a high response rate. The feedback from the first event allowed us to improve the second the symposium. Attendees were asked to rate the overall quality of the event on a scale of 1-5, with 5 being best. Ninety-two percent of the attendees at the first colloquium rated the event 4 or 5, and 97 % of attendees of the second session rated the event a 4 or 5. Several students included comments such as: "Speaker choice was very good—several perspectives hit," "Keep it up!" "It was great & informative! Good speakers." and "I greatly enjoyed the lectures. My interest was held throughout." When asked for topics that they would like to hear more about at future colloquia, they generated a wealth of new ideas for future discussions with undergraduates--everything from medical ethics to emerging infectious diseases to sustainability to climate change.

**Summary:**

With the support of the Consortium, we felt the colloquia series achieved its objectives and educated students about the interwoven nature of health disparities, the environment, and population growth. With the complexity of problems that our society faces it will take an interdisciplinary approach from many fields to come to resolutions. This seminar series was the first that attempted to connect to students early in their academic careers and provide a framework of how problems outside of their focus field could affect them and require their participation in the solution. In addition, this seminar series sets a framework for future seminars of this type. Overall, both events were a complete success.

16 June 2008

\* The name of the series was changed from "Bursting the Boundaries of Scientific Discovery" to "Beyond the Boundaries of Scientific Discovery" to better reflect the intent of the colloquia.