

WHY SHOULD ANYONE INTERESTED IN SCIENCE COME TO GUTENBERG COLLEGE

By Dr. Charley Dewberry

When I tell people that I am a tutor at Gutenberg College and explain that it is a four-year Great Books college, invariably they ask about job prospects for its graduates. They are not alone in their concerns. Many people assume that a liberal arts education is outmoded; it is not considered suited to the modern job market. I do not agree. Even if the primary purpose of an education is job training (which I will argue against), then I would still maintain that Gutenberg College is not an outmoded form of education. Below are three reasons why.

1. A Gutenberg education is the best choice for an undergraduate education for some students in science.

As an ecologist, I believe that Gutenberg College not only is a good choice, but I would argue that it is among the best choices for a scientist. I did not always believe this. Early in my education I decided that I wanted to be a scientist. I immediately began to emphasize math and science at the expense of the humanities. Since I already knew what I wanted as a career, why should I take classes that did not help me become a scientist? In short, I believed that specializing as quickly as possible made sense because doing so would give me a competitive edge over other students. I changed my mind when I started a Ph.D. program in stream ecology at Oregon State University. I read two books (or tried to) that argued that the method of science I had been taught since grade school was not defensible. Both books (Thomas Kuhn's *The* Structure of Scientific Revolutions and Michael Polanyi's Personal Knowledge) seemed to make a pretty good argument, but I had no tools to judge if they were right or not. In fact, I could barely read those two books. It finally dawned on me that the question "What is good science?" is not a scientific question; it is a philosophical question. The methods of science are of no use in answering such a question. You cannot set up an experiment and test the question. By focusing only on the sciences, I had crippled my ability to understand and judge philosophical issues within science.

All science programs, somewhere, ought to address questions like these: What is science? What are its limits? and What are its methods? A scientist ought to be conversant with the basic questions in philosophy of science. Without that background, the scientist is just relying on the authority of someone else. A good science program also should include reading the works of famous scientists like Copernicus, Galileo, Kepler, Newton, Darwin, and Leopold to understand not only their theories but also to see what they thought science was and how it is done.

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A prospective science student will have to look long and hard to find a program that meets these requirements. I find it ironic that today scientists can usually complete a science Ph.D. (meaning "Doctorate in Philosophy") without having taken a single philosophy course in their entire college program or having read the major works of great scientists. Current science education at the Ph.D. level is really just technical job training; today's so-called scientists are trained only as technicians. I was one of them. I was never required to take a single philosophy course, nor was I ever required to read any major works by scientists. I only learned to read the textbooks and key scientific papers that were considered relevant to on-going research. The maxim in my program was that any paper greater than five-years-old was probably outdated; only a handful of papers over five-years-old were ever assigned.

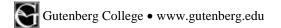
I returned to the University of Oregon and completed a Ph.D. in philosophy of science in 1995. I became conversant with the philosophical issues of science. I learned that a scientist's understanding of science, its methods, questions, and relevant examples affect the scientist's conclusions. I began to sort out the most relevant questions a scientist must face, namely, "What is science?" and "How do you do it?" I have also seen that in my own field, ecology, several mutually exclusive answers are given to the basic philosophical questions about science, its methods, and questions. I have become aware that the majority of scientists in my field have not thought about the basic philosophical questions in science. To take time to examine the philosophical issues in science would be detrimental to their careers in the short term, but not to take the time results in their being unable to interact intelligently with the fundamental issues within the field.

In summary, a liberal arts program such as Gutenberg College's provides the basic foundation for addressing the philosophical questions about science that all scientists should examine as part of their college education. Without this exposure, a scientist is really just a technician. He has no foundation and skills to interact with the philosophical issues of science. Rather than being an impediment to my career, I would argue that being a tutor at Gutenberg College and completing a Ph.D. in philosophy have been the most important parts of my education as a scientist.

2. A Gutenberg education is an excellent choice if a student wants to be a good citizen.

Job training is not the only purpose of education. The American experiment was founded on the idea that the ultimate authority of the government rests with an educated public. In most cases, our representatives in government will vote as they understand the majority of citizens would vote. Therefore a citizen needs to be thoughtful about a large number of complex issues. Our political well-being depends on it. I would contend that Gutenberg's liberal arts program educates citizens better than does a college job-training program in science or any other particular field.

Consider the following question, for example: Should the federal government have bailed out financial institutions as it did recently? This question is of utmost importance to our political and financial well being. Who is in a better position to have a well thought out position on the issue? A Gutenberg student or a person trained in the sciences?



A Gutenberg student will understand that this complex question is rooted in a set of social and political issues that have been debated since at least the beginning of the Enlightenment. They will have read Adam Smith, John Maynard Keynes, Friedrich von Hayek, and Kenneth Galbraith on economics and Aristotle, Thomas Hobbs, John Locke, James Madison, Alexis de Tocqueville, and Jean Jacque Rousseau on politics. All these authors make an important contribution to the debate, and Gutenberg students will have a basic understanding of it. The person trained as a scientist might not have taken a single economics or political science class (at best, he may have taken a couple of each), and he likely has not read more than a paragraph or two of the authors listed above. Who is better informed to be able to decide whether or not the government should bail out the financial institutions? I believe that the Gutenberg student is.

A student with a Gutenberg education has an additional advantage. While I was encouraged from early grade school to emphasize science and math, I did not listen to the advice as well as I might have. At Michigan State University, my undergraduate majors were listed as political science, economics, and zoology. (It was the 1960s after all). I learned the principles of macro- and micro-economics from lectures by professors. I was familiar with the names of the authors mentioned above, and I could have given you a few bullet points about what each of them believed, but not until I became a tutor at Gutenberg did I see the long historical debate within economics and political science as a complex series of issues embedded in a bigger discussion about philosophy, religion, politics, and science. As a Gutenberg tutor, I have gained a better understanding of why economists and political scientists disagree with each other. I would contend that a Gutenberg student has a better understanding of economics and political science than I had as an undergraduate who majored in those areas.

Our society is far more complicated than it was at the time this country was being formed. To be educated and informed on important issues is a more difficult task today. Yet, the future of the American experiment depends on citizens being educated on the issues.

There is, however, an even more important issue at stake for the survival of the American experiment. Many of the founding fathers—Benjamin Franklin, George Washington, John Adams, Thomas Jefferson, and James Madison to name a few—believed that the long-term survival of the American experiment must be grounded in a virtuous citizenry: they used the term "a virtuous republic." A Gutenberg student is well acquainted with the notions of virtue and morality and their importance not only for political survival but as the basis for his life. Such an issue is not likely to be mentioned in a science curriculum. Where will a science student confront this important issue that has such a profound implication for politics?

3. A Gutenberg education focuses on the important questions of life.

A scientist is a person. Until the recent focus on job-training, education's core mission had always been to focus on what are called the "big questions" of life, questions such as these: What is man? Who is God? and What is a good life? To be educated meant exploring these most important questions of life. Such questions are the heart and soul of a Gutenberg education, but where are they addressed in a typical science curriculum?

Placing job training as the most important purpose of education reduces the purpose of education to preparing human beings to become effective cogs in the global economic machine. Getting a job is certainly necessary for a good life, but there are other important issues of life as well—interpersonal, religious, societal, and ethical to name a few. Where does a good career fall in relationship to those other aspects of life? To answer this question incorrectly has profound implications for one's life, but I am not aware of a science program that, even superficially, addresses this question.

An education designed to focus on job training is perhaps not even in keeping with my well being at all. Rather, the aim of such an education could be to serve economic and political institutions over my interests. If current educational philosophy assumes that the needs of the culture and state are of greater importance than the needs of the individual, then it is antithetical to Christianity (and most of the founding fathers' perspectives, I might add). For a Christian, the most important issue of life is the relationship of the individual to his God. The well being of the culture or the state are secondary issues. From a Christian perspective, if education loses sight of the importance of the individual over the culture and political institutions, then true education has ceased to be.

Summary

Even if the primary purpose of education is job training, a Gutenberg education is a good choice for some students interested in science. A competent scientist must make important decisions about the nature of science and its methods. Without this background, the individual is a mere technician. Gutenberg students are trained to make such decisions because, throughout their four years, they participate in science seminars in which they read large selections from the major scientists.

I disagree, however, that the primary purpose of education is job training. Examining major questions like "What is a meaningful life?" or "How important is a particular career choice to my life?" are more important than job training. The core of the Gutenberg project seeks to examine these questions.

Finally, focusing on job training does not adequately prepare a citizen to help continue the American experiment. The founding fathers saw clearly that a republic not grounded in virtue would not long endure. Gutenberg students have seen the role of virtue in the rise and fall of ancient Greece and Rome. They are well aware of the role of virtue and morality in culture and, most importantly, in their own lives as well.

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