

# A Case in Point: From Active Learning to the Job Market



by

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Ken O'Brien opened his day planner to see what Monday held in store for him. He had worked at Byzantine Science Company for the past five years, but lately it seemed like his responsibilities were growing exponentially, while his time was shrinking rapidly. He wondered briefly if he should have accepted the promotion to management six months ago, but he quickly brushed that thought away. He liked his new position; it was challenging and gave him some authority, and he was well-compensated.

Today, he had to review the reports on the projects the group completed over the last six months before sending them on to Byzantine's CEO. He glanced at the titles on the reports produced by his project managers: Health Effects of Mosquito Control Efforts in Marriott County, Cost of Land Reclamation for Zindell's Mine, Advantages and Disadvantages of Garbage Incineration as a Fuel Source, and Materials for Building Stronger Yet Softer Highway Barriers. Ken knew he would be pleased with the final reports because his people did excellent work.

Ken sighed, realizing the reports would have to wait. They were not the most pressing need today. Ken had been given the go-ahead from the front office to hire an additional scientist for his project team. He really couldn't predict in what discipline a person was needed, as the Byzantine Company did mostly consulting work for other industries and each project called for different skills. That was one of the aspects of this company that attracted Ken. He could never predict what projects they would be working on six months down the line. His project team already had strong people in most every critical discipline, so he had the luxury of choosing the person he thought would best fit the company in general. He glanced again at the advertisement he had placed:

*Byzantine Science Company seeks a self-motivated entry-level scientist to join our multidisciplinary project team. The successful candidate will participate in our consulting program within a team-oriented environment. Analytical reasoning skills, original ideas and unique approaches to problem solving are highly desired. This position requires a bachelor's degree in any field of science. Working knowledge of instrumentation in that field of science is expected and strong computer skills are assumed. All applicants should possess excellent written and oral communication skills. Byzantine Science is an equal opportunity employer.*

With a determined look, Ken picked up the manila folders he had on his desk, which he had previously requested from personnel. The company's Human Resources Division had sent his ad to the placement offices of the local colleges; in response, many graduating seniors had requested that their prepackaged dossiers be forwarded to him. In an initial perusal last week, he had already narrowed his choice down to five most outstanding candidates. Now, he had only to choose the best candidate for his particular department and arrange an interview for later this week. He was somewhat concerned that with his additional job responsibilities, he would have minimal time to invest in training a new employee; he wanted someone who could learn quickly and who would stay with the company for more than a few years. He opened the top file and focused on the evaluation that was part of the prepackaged dossiers. These evaluations, he thought, would be instrumental in finding the right person for the job.

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Student Evaluation Form

TO THE EVALUATOR:

The student named below has requested that you evaluate him/her as a candidate for employment or graduate school. The statement you provide will serve as an assessment of this candidates abilities and will be sent to prospective employers or graduate schools at the candidate's request. An academic transcript, which will be used to judge the scholastic aptitude of the candidate, is submitted in conjunction with your evaluation. Please complete your assessment of the candidate based primarily on personal qualities believed relevant to the individual's performance and development in an entry-level position. Whenever possible, cite specific examples of past work that form the basis for your opinions. The candidate has indicated at the bottom of this form whether or not he/she wishes to have access to this evaluation.

As an agency of the state, the State University System must comply with federal and state legislation that prohibits discrimination on the basis of handicap. Please refrain from mentioning any physical or mental handicap that the applicant may have.

Thank you for taking the time to carefully evaluate this individual.

Candidate's Name William Latham

Candidate's Major: Chemistry Minor: Environmental Science

Evaluator's Name and Title: Dr. Kris Wilt, Associate Professor of Chemistry

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APPLICANTS MAY WAIVE THE RIGHT OF ACCESS TO WRITTEN EVALUATIONS AS PROVIDED FOR UNDER THE EDUCATION PRIVACY ACT OF 1974. PLEASE INDICATE YOUR WISHES BY SIGNING BELOW EITHER STATEMENT A OR B.

A. I hereby waive my right of access to the Confidential Evaluation provided by the person named on the front of this form. He/she should be notified that the confidentiality of the evaluation is preserved.

Applicant's signature \_\_\_\_\_ Date \_\_\_\_\_

B. I do not waive my right of access to the Confidential Evaluation provided by the person named on the front of this form. He/she should be notified that I retain my right of access, and the confidentiality of the evaluation is not guaranteed. Moreover, I understand that not waiving my right of access is not prejudicial to my application.

Applicant's signature William Latham Date 4/13/13

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Comment on the applicant's strengths and weaknesses.

How long and in what context have you known the applicant? I had William as a First-year student in General Chemistry and in my Senior Seminar Class

William was in my Senior Seminar class this past fall. He turned in an outstanding paper on the actual impact that electric cars would have on the environment when all the factors were considered. He brought out many interesting points and presented a thorough discussion regarding the overall efficiency of these cars, national vs. local pollution, the large amount of lead needed for the car batteries, etc. His analysis went well beyond the topics that we had covered in class, and showed some real insight into the complexity of environmental issues.

As a student in my General Chemistry class three years ago, William was always able to put the chemistry he was learning into a larger context. He would on occasion bring up other topics related to the course content. For instance, he wanted to know how the molecular shape of chlorofluorocarbons contributed to their reactivity in the atmosphere. He was often asking follow-up questions such as these in class or during office hours. In instances where designing laboratory experiments was an option, William always came up with a very creative question and an original route to performing his experiments. These are evidenced in the work included in his student portfolio.

William's push for creativity sometimes makes him late with assignments, and he has some difficulty accepting constructive criticism. This same inventive zeal also makes it more of a struggle for William to work in a group setting, as he tends to have trouble sharing responsibilities with his classmates. Overall, however, William is a very bright, very creative person whose enthusiasm to explore many topics from many angles will always keep him busy and productive.

Overall ranking of applicant

|                       |                      |                      |                 |                 |                    |
|-----------------------|----------------------|----------------------|-----------------|-----------------|--------------------|
| Outstanding<br>top 5% | Excellent<br>top 10% | Very Good<br>top 15% | Good<br>top 25% | Fair<br>top 50% | Poor<br>bottom 50% |
|-----------------------|----------------------|----------------------|-----------------|-----------------|--------------------|

Evaluator's Signature

Kris Wilt

Date

4/18/13

Student Evaluation Form

TO THE EVALUATOR:

The student named below has requested that you evaluate him/her as a candidate for employment or graduate school. The statement you provide will serve as an assessment of this candidates abilities and will be sent to prospective employers or graduate schools at the candidate's request. An academic transcript, which will be used to judge the scholastic aptitude of the candidate, is submitted in conjunction with your evaluation. Please complete your assessment of the candidate based primarily on personal qualities believed relevant to the individual's performance and development in an entry-level position. Whenever possible, cite specific examples of past work that form the basis for your opinions. The candidate has indicated at the bottom of this form whether or not he/she wishes to have access to this evaluation.

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Thank you for taking the time to carefully evaluate this individual.

Candidate's Name Terri Gordse

Candidate's Major: Biochemistry Minor: \_\_\_\_\_

Evaluator's Name and Title: Dr. Peter Floron, Professor of Chemistry

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A. I hereby waive my right of access to the Confidential Evaluation provided by the person named on the front of this form. He/she should be notified that the confidentiality of the evaluation is preserved.

Applicant's signature Terri Gordse Date 4/15/13

B. I do not waive my right of access to the Confidential Evaluation provided by the person named on the front of this form. He/she should be notified that I retain my right of access, and the confidentiality of the evaluation is not guaranteed. Moreover, I understand that not waiving my right of access is not prejudicial to my application.

Applicant's signature \_\_\_\_\_ Date \_\_\_\_\_

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Comment on the applicant's strengths and weaknesses.

How long and in what context have you known the applicant? Two years, Terri was in my Science Writing and Communication class as a junior, and in one semester of my Physical Chemistry lecture and lab as a senior

Last fall, Terri was a student in my "Scientific Writing and Communication" course. She really excelled in the oral communication assignments. We had debates on the use of Olestra, pesticides and other synthetic materials, and here her skills in weighing many facets of issues were evident. She often assumed the leadership of her debate team, was instrumental in helping the group to lay out an advanced strategy, and took the initiative in getting the job done. Sometimes she had a slight tendency to act as an expert in an area where she had little background, but overall her reasoning and positions were sound. Terri made progress with her writing in this course but still had difficulty writing about scientific matters in a sufficiently clear fashion. Terri also excelled in group activities - she was in a group with a very troublesome classmate, and she showed sensitivity and diplomacy in dealing with this person who repeatedly threatened to undermine the group's progress.

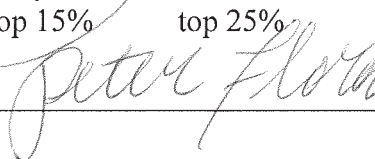
I also found Terri to be very confident and capable in lab. In my physical chemistry course, her writing also suffered from lack of clarity. She is very good at adhering to procedural details and shows insight into the overall experimental process, though she can be reluctant to devise new protocols. Her portfolio included several examples of her analytical chemistry laboratory reports. Her results show a high level of accuracy and precision that is a result of her careful lab technique. She demonstrated very good computer skills, as seen in the spreadsheet macro that she wrote to analyze her group's data for physical chemistry, which was also included in her portfolio. However, in my physical chemistry course, she had difficulty working independently, and she sometimes needed help applying course concepts to lab problems or other homework assignments outside the classroom. For instance, the spreadsheet macro she wrote was excellent, but she did have great difficulty choosing the equations and variables pertinent to the laboratory experiment.

In summary, Terri is a very mature, well-grounded and well-rounded individual who can get the job done. She works best in a group situation where she can draw support from others for her work, and motivate theirs.

Overall ranking of applicant

|                       |                      |                      |                 |                 |                    |
|-----------------------|----------------------|----------------------|-----------------|-----------------|--------------------|
| Outstanding<br>top 5% | Excellent<br>top 10% | Very Good<br>top 15% | Good<br>top 25% | Fair<br>top 50% | Poor<br>bottom 50% |
|-----------------------|----------------------|----------------------|-----------------|-----------------|--------------------|

Evaluator's Signature



Date

4/21/13

Student Evaluation Form

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Candidate's Name Kathryn Gradenberg

Candidate's Major: Physics Minor: Environmental Science

Evaluator's Name and Title: Dr. Sam Beasley, Professor of Physics

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Applicant's signature Kathryn Gradenberg Date 4-15-13

B. I do not waive my right of access to the Confidential Evaluation provided by the person named on the front of this form. He/she should be notified that I retain my right of access, and the confidentiality of the evaluation is not guaranteed. Moreover, I understand that not waiving my right of access is not prejudicial to my application.

Applicant's signature Date

Comment on the applicant's strengths and weaknesses.

How long and in what context have you known the applicant? I have known Kathryn for four years. She is my advisee and was enrolled in my capstone Environmental Science course.

Kathryn Gradenberg performed well in my Environmental Studies seminar course last fall. One of the major class projects was to research the impact of waste water treatment methods and prepare a written report for a town council meeting. In addition, students made presentations in class to a mock town council made up of other students in the class. The written report Kathryn prepared was exemplary. She had researched the topic carefully, came up with a number of options, and related the advantages and disadvantages of each. At the end of the paper she made a recommendation to the council and supported her choice with clear arguments. However, in the oral presentation Kathryn was not confident talking in front of the class, and as a result, the credibility of her contributions was jeopardized. I know from her paper and from consultations we had prior to the talk that Kathryn had a carefully laid plan for her presentation, but she was quite intimidated in front of a group of her peers. When one "council member" asked a question she became flustered and couldn't piece together a logical answer.

In this class we also had several open-ended discussions based on real world dilemmas. Kathryn found these activities interesting and wrote very thoughtful follow-up papers relating the decision she would make. As is common in "real world" situations, there were many issues that should be considered but were extraneous to the dilemma itself. Kathryn was facile at sifting through these extraneous details to get to the essence of the issue. However, these types of open-ended activities greatly frustrated Kathryn because there was no right answer and because grading of the follow-up papers had a subjective component.

As a junior and senior, Kathryn has tutored introductory physics students one-on-one. Some of her tutees have been students in my classes. Kathryn has shown extreme patience with these students which is noteworthy considering the low level of motivation some of these students have exhibited. Though Kathryn prefers to work alone in general, she appears to enjoy her interaction with these younger students.

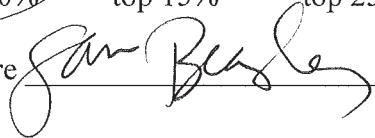
Our institution requires that each student maintain a portfolio of work. Kathryn has included the lab report for a very interesting project she did in one of her chemistry classes. The project was developed completely on her own and it examined the effects of three different chemicals typically encountered in urban areas on two different structural materials. Kathryn's careful planning and organizational skills were apparent from her report. The experimental methods were very complete and included control experiments with water.

Overall, Kathryn is hard working and has a high level of insight. She can present her ideas well in a written format or on an individual basis. It is evident that she gives matters forethought and has proven she can do solid background research.

Overall ranking of applicant

|                       |                             |                      |                 |                 |                    |
|-----------------------|-----------------------------|----------------------|-----------------|-----------------|--------------------|
| Outstanding<br>top 5% | <u>Excellent</u><br>top 10% | Very Good<br>top 15% | Good<br>top 25% | Fair<br>top 50% | Poor<br>bottom 50% |
|-----------------------|-----------------------------|----------------------|-----------------|-----------------|--------------------|

Evaluator's Signature



Date

4/18/13

Student Evaluation Form

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Candidate's Name Ted Forrest

Candidate's Major: Biology Minor:

Evaluator's Name and Title: Dr. Everett Berkeley, Professor and Chair, Biology Dept.

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Applicant's signature Ted Forrest Date 4/8/2013

B. I do not waive my right of access to the Confidential Evaluation provided by the person named on the front of this form. He/she should be notified that I retain my right of access, and the confidentiality of the evaluation is not guaranteed. Moreover, I understand that not waiving my right of access is not prejudicial to my application.

Applicant's signature Date

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Comment on the applicant's strengths and weaknesses.

How long and in what context have you known the applicant? I have known Ted for  
four years, he was a student in my Introductory Biology course

Ted Forrest has been very visible in the biology department over the last four years. He has served as an officer of the Biology Club the last two years - as President his senior year. As a result of holding this position, Ted has been active in a number of outreach projects directed towards residents of our community, and he has involved other biology majors in these projects as well. In this capacity, he has been a strong role model for younger students.

In my Introductory Biology class where group activities were common, Ted always contributed to group discussions. While he clearly had his own well supported opinions, he was very respectful of others opinions. If Ted becomes deeply involved in the discussion, he has a tendency to dominate the discussion with his arguments, reiterate his arguments over and over, and sometimes lose sight of the goal of the discussion.

Ted participated in our summer research program as a junior. The paper he wrote describing his wetlands restoration project under the direction of Professor Marsh was very thorough and complete, and his experimental expertise was evident. The report included a detailed description of the project's history and the goals of his particular restoration component. The analysis section that he included was admirable. However, Ted's difficulty is that he often includes far too much unnecessary information in his written and oral reports in general, which distracts or confuses his audience. In this instance, his report could have been half as long and still been complete.

As part of our departmental seminar series each graduating senior researches and gives a seminar on a topic. Ted chose to research the impact of farming and human habitation on the delicate ecosystem in the Florida Everglades. He wrote an excellent, persuasive piece on the negative impact that farming has had on this ecosystem - his point of view was well supported with citations from literature and government studies. As is characteristic of Ted's personality, he does not take claims at face value. He was very astute at recognizing what claims were unsupported, and sought additional information before arriving at his own decision. Sometimes, his thoroughness has made it difficult for him to complete assignments in a timely fashion and he often asks for extensions; he gets overwhelmed easily by the workload.

Ted has excellent reasoning skills and is a very capable public speaker. He has a great deal of charisma and confidence. He writes reasonably well and is proficient at doing in-depth research.

Overall ranking of applicant

|                       |                      |                      |                 |                 |                    |
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|-----------------------|----------------------|----------------------|-----------------|-----------------|--------------------|

Evaluator's Signature Everett Berkley Date 4-15-13

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Thank you for taking the time to carefully evaluate this individual.

Candidate's Name Martin Clinger

Candidate's Major: Health Sciences Minor: \_\_\_\_\_

Evaluator's Name and Title: Dr. Helen Genoble, Professor of Biology

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Applicant's signature Martin Clinger Date 4-12-13

B. I do not waive my right of access to the Confidential Evaluation provided by the person named on the front of this form. He/she should be notified that I retain my right of access, and the confidentiality of the evaluation is not guaranteed. Moreover, I understand that not waiving my right of access is not prejudicial to my application.

Applicant's signature \_\_\_\_\_ Date \_\_\_\_\_

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Comment on the applicant's strengths and weaknesses.

How long and in what context have you known the applicant? I met Martin when he took

Genetics from me last fall

Martin Clinger returned to school after working in the claims department of a health insurance company for three years. He is an avid reader and has educated himself on many issues in medicine and health. His goal is to work in a public health-related occupation, but not as a doctor or nurse. He would prefer to work in a job that involves the interplay of health issues and society.

In my genetics lab, Martin learned the basic techniques of DNA manipulations including DNA isolation, enzymatic cleavage of DNA, separation and detection of DNA using agarose gels, splicing DNA into vectors, transforming host cells, etc. Most students were focused on just learning these basic techniques, but Martin was more interested in how they fit into a larger scheme, such as how these techniques might be used in human genetic manipulations. He wrote an article for our campus newspaper comparing and contrasting the ethical implications of different genetic manipulations that are under development (e.g. gene therapy, cloning).

One of the class projects in genetics was to work collaboratively in groups of four students on a molecular forensics project. Martin found this frustrating as he prefers to work independently when placed in a group with students who are not at his level. When the project was subdivided and each student worked individually, he did an excellent job on his part.

Martin's lab notebooks are exceptional. They are complete and organized, which is atypical for our students. Martin has the patience to work through complicated data analysis. He has very strong computer skills, as evidenced by the extensive use of computers in his data analysis efforts.

Overall, Martin is competent and motivated. He seems to work best in situations that require linear thinking and a very methodical approach. His maturity, common sense, and drive will make him well-suited for a wide variety of positions.

Overall ranking of applicant

|                       |                      |                             |                 |                 |                    |
|-----------------------|----------------------|-----------------------------|-----------------|-----------------|--------------------|
| Outstanding<br>top 5% | Excellent<br>top 10% | <b>Very Good</b><br>top 15% | Good<br>top 25% | Fair<br>top 50% | Poor<br>bottom 50% |
|-----------------------|----------------------|-----------------------------|-----------------|-----------------|--------------------|

Evaluator's Signature  Date 4-15-13