Jonathan Briggs
6449 Colby Street
Oakland, CA 94618

March 13, 2005

To: Dr. Terry Macaluso
Executive Head of School
Eastside Prep
10635 NE 38th Place
Kirkland, WA 98033

Dear Dr. Macaluso,

I'm writing to express my interest in the position of Upper School Math and Physics teacher/Director of Technology. During out meeting in February it became apparent that I had much to offer a school in the midst of creation.

For the last four years I have worked at Bentley School in Lafayette California, that has grown from 90 students to the almost 300 it has now at the ripe old age of 8 years. It is with some amusement that I find myself being a veteran at such a young age. As the student body has grown I've found myself involved in nearly every aspect of the school from admissions to graduation. I've taught many different courses, built a science lab, hired teachers and scheduled every child, teacher and room kindergarten through twelfth and been an advisor. I've taught freshmen to seniors in subjects from math, to computer science and all levels of physics. This last year I was put in charge of the science department and evaluate and assist four other teachers in their teaching of science at Bentley.

Eastside is uniquely attractive to me because of the possibility of combining teaching with the director of technology position. Over the last two years I've worked very closely with the director of technology at Bentley from everything to testing new systems to troubleshooting network problems. Through this experience I am confident that I could troubleshoot all the problems that will arise on the network as well as roll out such features as student web pages, email accounts or any other features the school might like to implement. This combined with teaching classes is particularly appealing to me.

My ability to teach many courses, my expertise in technology and my experience with rapidly growing, young schools make me an ideal candidate for Eastside Prep.

Sincerely,

Jonathan Briggs

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Jonathan B. Briggs

Professional Experience

Bentley School, Lafayette, CA 2001 – Present

2004-2005 Chair of Upper School Science, Upper School Physics Teacher, Director of Course Scheduling K-12

- **Chair of Upper School Science**
  - Managed all aspects of the science department from curriculum to hiring and budgets
  - Facilitated communication between the administration and the science faculty
  - Address parental concerns, level placement (AP/Honors/Regular)
- **Upper School Physics Teacher**
  - Taught four sections of physics including one honors course and one AP course
  - Instituted a new elective, Science Workshop (included a teaching component with the Lower School)
  - Assisted the director of technology in computer science independent studies
  - Taught a two week intensive course in Electronics to students from 9th to 12th grade
  - Selected as the Upper School faculty convocation speaker
- **Director of Course Scheduling**
  - Scheduled all courses, teachers, students and classrooms for kindergarten through 12th grade
  - Wrote an online signup program for the Upper School students
  - Redesigned the daily schedule for all grades K-8

2003-2004 Upper School Physics Teacher, Director of Scheduling 9-12

- **Upper School Physics Teacher**
  - Taught four sections of physics including two different AP Physics Courses (Mechanics C and Electricity & Magnetism C)
  - First AP Physics Electricity and Magnetism course offered at Bentley (average AP score 4.85)
  - Co-taught a course on relational database design with the Director of Technology
  - Taught a two week intensive course, Protecting Information – Cryptography
- **Director of Course Scheduling**
  - Scheduled all courses, teachers, students and classrooms for 9th through 12th grade
  - Co-led a group of students in the building of a web directory that referenced the scheduling data
- **Spring 2004 Took over as Chair of Upper School Science**
  - Assisted the retiring chair in all decisions
  - Assisted in the hiring of three new faculty

2002-2003 Upper School Physics Teacher

- Taught five sections of physics over three courses including Conceptual Physics and AP Physics
- Designed and outfitted an AP level Physics Lab
- First AP Physics course offered at Bentley (average AP score 4.00)
- Taught a two week intensive course where Upper School students developed a 45 minute lesson to teach 4th and 5th graders at the Lower School

2001-2002 Upper School Math Teacher

- Taught four sections of math in Precalculus (Honors (1) and Regular (2)) and Multivariable Calculus (1)
- Assisted in the hiring of my replacement as I moved into the Science Department
- Ran a math fair for the Lower School taught by my Precalculus students
- Taught a two week intensive course, Physics of Sailing

Other Responsibilities at Bentley

- **Advisor to 8-13 students** **2001-Present**
- **Admissions Committee** **2003-Present**
- **Curriculum Committee** **2004-Present**
- **Technology Committee** **2004-Present**
- **Faculty Mentor** **2003-Present**
- **Senior Project Reader/Advisor** **2001-Present**
- **Academic Dean Search Committee** **2004-Present**
- **Coach - JV Girls Volleyball** **2001-Present**
- **Upper School Daily Schedule Committee** **2003-2004**
- **Trimester Transition Committee** **2003-2004**
- **Freshmen Retreat Counselor** **2002-2004**
- **Ran Blue-White (field day, rallies, etc.)** **2001-2004**
- **Assistant Golf Coach** **2002**

Red Herring Communications, San Francisco, CA **Summers 1998-2000**

- **2000 Intern: Sales and Business Development**
- **1999 Intern: Marketing and Business Development**
- **1998 Intern: Information and Technology department**

Williams College, Williamstown, MA **1997-2001**

- **Teachers Assistant for Physics 131 "Pre-med Physics" (2000)**
- **Ski instructor (1997-99, 2001)**
- **Sports Editor, Layout Editor, Asst. Managing Editor, Williams Record Newspaper (1998-2001)**

Professional Development

Exploratorium Teachers Institute, San Francisco, CA **Summer 2004**

- Spent five weeks learning and sharing inquiry based curriculum in Physics
- Invited to be an Teachers Institute Assistant Teacher in the future
- Featured in the San Francisco Chronicle as an Iron Science Teacher

Teece Fellow **Summer 2004**

- Awarded a grant to develop a new course, Science Workshop and learn the CAD program Pro/Engineer.

CAIS New Teacher Workshop **Fall 2002**

Conferences

- **NAIS (2002), CAIS (2003, 2005), NSTA (2004)**

Education

Williams College, Williamstown, MA **B.A. Physics** **1997-2001**

Sea Education Association, Woods Hole, MA **Spring 2000**

- Studied Oceanography on land and aboard the scientific research vessel SS/V Westward, a 125' staysail schooner operated on the Atlantic Ocean
- Appointed watch Captain

Computer Skills

- Proficient with Windows, Linux, and OS X and all internet applications
- Proficient in all Office Applications (especially Word, Excel, and PowerPoint)
- Proficient in HTML, CSS, PHP and mySql databases
- Proficient in Photoshop, Premiere, iMovie and PageMaker
- Familiar with Plone, Java, python, perl and shell scripting
- Familiar with Mathematica, PTC Pro/Engineer, Circuit Maker
- Familiar with Quark Express, Illustrator, Animator, Dreamweaver, Frontpage, Flash

Course Expectations & Syllabus
Physics (2003-04)
Mr. Briggs – Room 12A

jbriggs@bentleyschool.net
jbriggs@wso.williams.edu
School: 925 283-2101
Home: 510 653-3885

"All science is either physics or stamp collecting."
– Ernest Rutherford

Required Text: *Holt Physics*
ISBN: 0030565448

Course Description:

Welcome to Physics! Physics is the most expansive of all the sciences, exploring the interactions of Galaxies and sub-atomic particles. You will learn about some of the most powerful and influential ideas humans have ever thought and how to use those ideas to understand the world around you. If you've ever wondered how a cell phone, sailboat, car, airplane, jet engine, bicycle pump, or anything else worked then get ready for a fun year of exploration and understanding. You'll also be able to answer the next kid who asks you "why is the sky blue?"

Course Expectations:

- **100% Commitment –** Physics requires absolute commitment to understanding. Most of the material directly builds on the previously developed ideas and there is nothing more frustrating than having a poor foundation for the whole year. I am 100% committed to everyone excelling in Physics and am available before school, break and lunch nearly every day and almost anytime by appointment.

- **Responsibility:** When it comes down to it you know better than anyone how confident you are with the material. It is therefore your responsibility to let me know as soon as you are concerned with your mastery of the material. I will do my absolute best to restore your confidence as quickly as possible.

- **Respect your fellow classmates:** This goes without saying but is essential to any enjoyable and productive class.

- **Respect the Physics room:** There is a lot of expensive equipment in the Physics room that is fragile, playing with equipment in potentially destructive ways is unacceptable as is removing any equipment from the room at anytime.

Required Materials:

- **Bring to class everyday - 3 ring Physics notebook (see first homework assignment for details)**
- **Bring to class everyday - A calculator with trigonometric functions (like a TI-83)**

Class Policies:

Class policies will be discussed in more detail throughout the next couple weeks. Some highlights are:

- One homework quiz will be dropped per quarter (quizzes cannot be made up)
- Every test must be corrected up to 100%.

Grading:

Grading will be done on a straight point system and will be posted weekly under a codename that you may change at anytime. Expect about 500 points per quarter, tests count for approximately 100 points and other assignments are worth anywhere from 5 to 30 points.

Topic Outline:

1. **Kinematics (motion)**
2. **Dynamics (Newton's Laws)**
3. **Work and Energy**
4. **Momentum**
5. **Gravity and Rotational Motion**
6. **Buoyancy and Bernoulli**
7. **Sound**
8. **Optics and Light**
9. **Electricity**
10. **Magnetism**
11. **Modern Physics**

Prompt: Discuss an assignment you gave students that did not go well, explain how and why it fell short of success and how you would improve it next time (3 pages maximum)

Last year I assigned a physics project to build a musical instrument. For this project, students formed groups and constructed a unique instrument based on some research into sound outside of class. This was a project I adapted from a phenomenal physics teacher, David Lapp. When I was in high school I visited his class after the musical instrument project and was very impressed. Each instrument that I saw was brilliantly constructed with complete documentation including photos and calculations. I assumed that when I ran the same project, I would get similar results.

What I received that year were some very creative instruments, mostly poor documentation, and mediocre presentations. I was somewhat confused and a bit disappointed but I noticed that the students were glowing. They were so pleased with their instruments and there was a steady stream of my students showing off their instruments during breaks and lunch. Clearly they had met or even exceeded their own expectations; the problem was that their expectations and mine were out of alignment.

After that assignment I spent some time reflecting on the differences between my school and Dave Lapp's school. I realized that he had nearly 100 students a year and has been doing the musical instrument project for nearly 20 years. Every student who builds a new instrument is competing with best of the last 20 years and they may have been thinking about their instrument for over a year as they know even as a freshman that it is coming. Additionally I was comparing my entire class to the four most impressive instruments shown to me when I visited. My students had no such context in which to place their instruments, they only had a grading rubric that I handed out and class

discussions to set their expectations. Beyond that the faculty and administration was also very impressed with the instruments.

I realized a few things, one my expectations were unrealistic, two their instruments were pretty good even though their presentations and documentations were less than polished and thirdly my students got a lot out of the project. In that light the project was quite successful though I still knew they could have been better. I addressed this in two ways, firstly I adjusted the way their next project was assigned and secondly I revised the musical instrument project this year.

For last years class I assigned them a final project that was fairly open ended. They had to write a two page proposal on what they were going to do with a schedule of due dates they assigned themselves. After I had a chance to read all the proposals each student met with me for ten minutes to discuss whether their self imposed due dates were setting them up to successfully complete the project after which we revised the dates until it set them up to win. The students really got into this process partially due to how rushed they felt at the end of the musical instrument project. I then graded students on how well they met their own deadlines and how close their final project matched their original vision. This project was tremendously successful. The expectations were completely clear between every student and me and my students either met their own deadlines or had good conversations with me about why they couldn't meet their own deadlines. I realized that the skill of meeting your own deadlines is rarely directly taught in school.

For this years musical instrument project I adjusted my due dates to separate out the instrument from the documentation and the presentation. By spreading the assignment due dates out throughout the week it forced my students to complete one aspect of the project and then focus on the next aspect resulting in far more refined presentations and

documentations. Additionally I started talking about the assignment at the beginning of the year allowing them plenty of time to come up with ideas, this resulted in far more creative ideas for producing sound as you've seen on the web when I visited.

It will be very interesting to see how the current class reacts to the open ended assignment at the end of the year that I talked about above. On one hand they had a much better experience with the musical instrument project which might make it harder to open up the discussions I was able to have last year about creating your own due dates in such a way that their projects are successful. On the other hand the projects they've done so far have been more in depth than last year's class.

There's still room for improvement on the musical instrument project, my thoughts for the next round are to create a check list of expectations that each group can go through, require a rough draft of the documentation early on and perhaps have groups fill out a mid project evaluation on what they've been doing well and what they could be doing better to complete this project to the best of their ability. These would be particularly pertinent to next year's freshmen class as they would benefit from more guidance.

Throughout this process I've realized that the educational value of this project is larger than just learning about physics and sound, it is an opportunity for them to explore responsibility, building, creation and working in a group. The goal is that they push their personal envelopes, physics becomes the conduit and it is only fitting that it pushes my envelope as well.

Mission and Purpose as an Educator

As a physics teacher my mission is twofold. For the students who really groove on science, they should be challenged just beyond their comfort zone. The goal I keep in my head is that their freshmen year in college physics will seem easy. The focus in my class is on their skills as problem solving and their ability to quantify, mathematically, their observations of physical phenomena. For the students whose interests lie elsewhere, my mission is to instill curiosity and a fundamental understanding of science so they can find information successfully, knowledgably digest a newspaper article and appreciate science. Beyond that I believe in teaching some life skills such as changing a flat tire, jump starting a car and wiring a stereo. In accordance with this all my students get a taste of building something whether it is a musical instrument or a science demonstration. I feel strongly that everyone should have some experience physically constructing something at some point in their education.

In my teaching I bring concepts back to everyday experiences as often as possible. When I'm teaching a unit on electricity, we talk about fluorescent lights, static cling and how to be safe in a thunder storm. With music we build instruments, investigate how they work and talk about why we like the notes that we do. When we talk about magnetism we look at speakers, tape players and computer hard drives. Additionally I accept questions throughout the year which get answered during any downtime in the course. Some of the questions I've received over the years have varied from "how does a car engine operate" to "what is the shape of the universe." My students are delighted when they find one that I can't answer and amazed when they find out that no one knows the answer.

In physics there is also a need for teaching critical thinking skills. Studies have shown that most of our ideas about how the world operates are formed at a very young age. It is essential that students build the ability to challenge their own ideas about the world. Because of this new concepts are easy to absorb but ones of similar difficulty about familiar objects can conflict with ideas formed at eight year old. Examples of this are why the moon has different phases or why the earth has different seasons. It is not uncommon for a student to know that it is winter in the southern hemisphere in August yet still cling to the idea that the

seasons are due to earth's varying distance to the sun which would make the southern hemisphere experience winter in December. My purpose is to have students progress their line of thinking to the next level, in other words what would the consequences of their theory be and do those align with careful observation. When a student has mastered this skill, they will answer their own questions as they ask them.

As an educator I also promote responsibility and integrity. I look carefully at how I address student requests and make sure that responsibility gets rewarded over whining and excuses. I am more lenient with students who ask for extensions before the due date and come to me with honesty instead of excuses. I've been known to have students repeat requests in a tone absent of whining. In accordance with this, any promise I make to a class or student is carried out as a model of responsibility as well. Additionally the amount of aid I give students on a project or preparing for a test is directly related to the manner and timeliness of their request. A student who arrives ten minutes before a test saying, "I don't get it," will not get the same attention as a student who has scheduled a meeting with me and is specific in what they need help with. I make sure to acknowledge when students are responsible in their requests and address irresponsible requests with an immediate conversation.

The final piece I bring into my teaching philosophy is fairness. I work hard to make sure that everything I do in the classroom is fair from grading to which students I call on in class. Students generally feel comfortable entering into any conversation about their experience in my class, on occasion they've had good ideas that were implemented immediately and other times we work on ways in which they can excel under the current system. I've had some really valuable conversations with students about the policies in my class and the reasons that they are in place. It has been amazing how much being heard can affect a students attitude in my class even if the system doesn't change.

All these ideals combined constitute my purpose as an educator; to challenge my students to be independent thinkers, scientifically confident and responsible.