

Engineering, Social Justice and Peace 6th Annual Conference

Call for expressions of interest

We are delighted to announce the sixth annual ESJP* conference, to be held at the RSA in central London. The meeting will be held from lunchtime on 4th August to lunchtime on 6th August 2010. It will include a variety of forms of interaction, including short papers and discussions, debates, workshops as well as poetry and art to facilitate a holistic exploration of the themes. Suggestions for sessions are welcomed and particularly in the following areas:

1. Critique of or alternative practices in the engagement of engineers with the communities which they serve.
2. Critique of or alternative forms of equitable engineering organization and management.
3. Critique of economic or military engineering practices.
4. Examples of pedagogies, curriculum or community service learning which promote socially just engineering practice.

We also welcome newcomers and students who are interested and have not yet begun to work in this area. Introductory sessions will be designed with this group in mind. Please email us with your interest in attending as well as your ideas for interactive sessions and papers.

**In collaboration with the Royal Society of Arts and Manufacture and Commerce Design and Society program <http://www.thersa.org/> the 'Higher Education Academy Engineering Subject Centre <http://www.engsc.ac.uk/> and Engineers Against Poverty <http://www.engineersagainstopoverty.org/>.*

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Reconstruct

Engineering, Social justice, and Peace (ESJP)
Periodic Zine Vol 2 Summer 2009

WELCOME

Welcome to the ESJP zine! ESJP is a network of academics, students and practitioners across a wide range of disciplines, which are asking two basic questions:

*What does engineering look like which is socially just?
What does the education of these engineers look like?*

Five years ago a team of concerned academics got together in Canada and launched the first annual conference. We have just hosted our fifth annual meeting. We feel we have come a long way since that first meeting, joining with like-minded individuals and groups, exploring research questions and designing classes. We now have a book series (<http://www.morganclaypool.com/loi/ets>), a set of course modules (to appear soon), and we have hosted many special sessions and workshops. But we need to do more, we need more engineers to join us, we need to reach out into different countries, we need to research and study new forms of practice and pedagogy... We welcome with open arms new practitioners, researchers and students willing to work with us to enhance an engineering practice which we believe will make a big difference, not only to the way we live but to the countless voiceless others.

Launch of new Journal

The International Journal of Engineering, Social Justice and Peace will soon be launched.

<http://library.queensu.ca/ojs/index.php/IJESJP>

We welcome any ideas in this developmental stage. Scholars in the area are invited to put forward their names as Reviewers and for the Editorial Board.

A word from Whidbey Island...

Hosting this year's Engineering, Social Justice, and Peace conference was a big leap of faith for me. In hindsight, I think it might have been an even bigger leap of faith by everyone else that attended. Fortunately, in true engineering fashion, bridges were built before anyone hit the ground too hard. My inspiration in hosting this conference was the previous three ESJP conferences I attended. Though the conferences and attendees varied, I was always struck by the beauty and power of a community coming together. My hope was to continue this tradition by facilitating an environment that allowed connections to emerge.



The leap of faith was in bringing together a bunch of strangers and trusting that community would materialize.

I invited engineers, academics and people in industry, people with little knowledge of engineering and social justice and people with a great deal of experience with this topic. There were definitely bumps as we all tried to figure each other out, but always with great respect. By the end, at least from my perspective, I felt that people left the conference feeling refreshed and inspired by each other.



I credit the positive feelings to many aspects – the beautiful space, the support and love by the many people who helped me put on this conference, the activities (e.g. art creation, bonfires, paradox exploring) – but mostly I credit the act of our gathering with the focus of social justice and peace. Thanks to everyone who attended, in person or in spirit. Chris Byrne Cohost on Whidbey

Art as critical thinking... The mobile project invited ESJP conference participants to use art as a thinking tool, to add some hands-on exploration to the day's schedule. Conference attendees spent the morning investigating the concept of *paradox*, naming polarities inherent in their work, and exploring a model for resolving/softening often contentious disagreements between those holding seemingly opposite views. The group explored the polarity of working inside/working outside of the system, naming the pros of each situation and potential problems of excess in either direction. We felt building a mobile offered the best available approach to experiencing this work through art: mobiles require attention to **balance** and to the notion of **fulcrum**. Choice of materials is limited largely by their (weight/size) relationship to each other, otherwise allowing for a wide range of personal expression. Mobiles could be constructed by individuals, by partners, or by groups.. We began with a beach walk to collect shells, wood, seaweed, any other natural materials that appealed to participants. I provided a selection of driftwood to use as hangers, some seedpods, sticks, and other small pieces of interest, as well as paint, markers, fishing line, paper, wire, power drills, and various types of glue. I introduced the project as a venue for exploring a polarity of significance to them if they wished to use it as such, or simply as a way to play with materials. We began mid-afternoon, on the heels of a full morning and a picnic lunch at the beach, and frankly I was skeptical anyone would choose to dive into a whole new activity. To my surprise, almost everyone did, spending the next couple of hours in conversation with working partners and/or with the materials.

After dinner, we took time to share the mobiles and our experience of the design process. This conversation was a critical part of the overall project, embedding personal experience in the larger supportive web of the group



For most participants, the materials became symbolic of issues and elements of importance in their lives (e.g. balancing patience and urgency or family and work, the mechanisms of compliance, finding safe space, the life cycle, fighting the system from within).



I believe it also allowed conference attendees to connect on another level (as making art tends to do), and contributed to the creation of collaborative, supportive space at the heart of the ESJP conference..
Judy Bierman Co-Host on
Whidbey

A student's viewpoint ... What does it mean to be an engineer? After two years of an engineering education, I thought I had a clue. To me, it meant that you are good with numbers. You probably have a knack for science, and can draw a great diagram. But, it always seemed like something was missing from this picture. However, after I came home from the conference on Engineering, Social Justice, and Peace, what was missing became clear. What if being a successful engineer included being a humanitarian? What if a successful engineer necessarily was a successful humanitarian? I am beginning to realize how much more there is to engineering besides math and science.

At the conference, I met a great group of people. Some who have been researching Engineering and Social Justice Issues for many years, as well as others who have never even thought about it. Then there was me. The lone engineering student invited through family ties. I was not quite sure what to expect or what role I would play. However, after just a day at the conference, I felt very comfortable with the people around me. The fervor held by some was balanced by the curiosity of others to create a remarkable camaraderie, and I, the lone wolf, was able to provide the lens of a student. There were a few activities in particular that I would like to point out because I believe they help to illustrate the dynamic of the group. The first activity was the creating of mobiles, delicately balanced structures which can flow freely. Judy Bierman explained to the group that art can be an extremely powerful thinking tool (to a room full of engineers). She could not have been more correct. We spent the afternoon creating our pieces that would represent something we felt, something inside of us. Later that evening, when we went around and shared our creations, I was blown away. For a group of engineers, with similar educations and similar visions of the world, each individual's mobile was so intensely dramatic, yet completely unique at the same time. It really showed me a power of art that I have never seen, and I believe it illustrated how important this power will be in reshaping this world. Art is something that is obviously neglected in an engineering education. But what if the power of art that I felt in the activity could be transferred to a classroom of engineers as yet another thinking tool?

It seemed throughout the weekend that we had grown closer and closer as a group but that there was still something missing. Earlier, we had attempted an activity involving team counting. The object of the game was to count to twenty, as a group, having only one number spoken by one single person at a time. If two people said a number simultaneously, we would have to start again. Following a number of attempts at the campfire, we were on the verge of giving up, when suddenly a quiet yet strong voice called out, "twenty." From there, someone took nineteen, then eighteen, then seventeen and pretty soon everyone began to understand what was going on and that it was going to work. As we got to number one, the crowd jumped up in excitement. This single moment of chills and laughter in the woods symbolized our completeness as a group. We had come from all corners of the world to this conference, and at this instant, had collaborated as one. The most important thing that I brought home from this conference was the feeling of inspiration. I am now very enthusiastic about the group as well as the idea of engineering and social justice in general. The conference was a great eye opener, and I feel lucky to have attended something like this at such a young age. I learned that taking a more holistic approach towards engineering a solution may be the key to a truly successful system, whether that comes from an artistic epiphany, the power of a group, or maybe even from numbers themselves. David Bierman

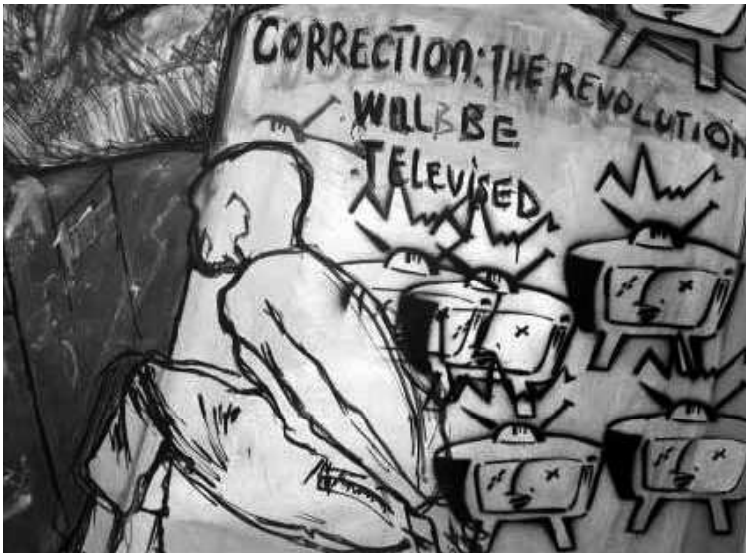
The Revolution in Engineering: How should students engage in Social Justice?

Every year we try to bring students to the annual conference when we can get the funding. We now have an emerging group of student members who would like to host their own conference as well.

The student conference will provide an opportunity for research students as well as undergrads engaged in social justice and engineering work to:

- *Present ideas/research/visions to an audience of fellow students and get peer feed-back*
- *Participate in sessions/workshops led by fellow students on key issues of interest*
- *Develop a network of contacts*

If you are interested in participating in the student conference, please contact Usman Mushtaq at usman.mushtaq@queensu.ca. Conference date and venue TBA.



6 years old

Woohhhhh!! I'm an elephant. Watch me swing my trunk around. My father had brought these gas masks from work. They were face masks with long tubes running from our mouth to a round canister. I think we are lucky to have these gas masks. No one else in the building has them. The three girls above our apartment peer jealously at us through the latticework on our stairwell. My father said we should wear these gas masks when the sirens wail because the scud would be coming. Scud!? That's a funny name for something everyone is so afraid of. Still, wearing the mask is fun because my sister and I can pretend to be elephants. A scud wouldn't harm an elephant. There's no way a scud can beat up a giant elephant. The only problem with my mask is that the air in it tastes funny.

24 years old

Iraq launched Scuds loaded with chemical/biological warheads against Riyadh and the US military installations there. Many of them were taken down by Patriot missile batteries or by anti-air fire. Yet, soldiers and civilians were always warned about the threat of chemical/biological weapons. "Protect yourself!" screamed the posters. It was ironic then that the majority of the health and environmental damage caused by the war was the result of "coalition" actions. Depleted uranium shells, abandoned transport equipment, and unpacked weaponry littered the landscape of Saudi Arabia. Jet fuel contaminated the ground around Riyadh International Airport. Burning oil fields poisoned the air. You never forget war even when it's over because twisted steel, burnt electronics and uranium shells don't decompose easily.

A Collegial Exchange

Liberal Progressive White Educated Canadian: Oh my, I didn't know any of this history. It's amazing what you just don't know. They, obviously, don't teach any of this to us in school.

UM: But then you never really had to learn in it. I, on the other hand, always had to.

LPWEC: What do you mean by that?

UM: I am the product of your history. You are the creator of your history. I have to live in your history.

Usman Mushtaq, ESJP member. 24 years of personal experience.

6 years old

Lights have now started to come up from the ground. They light up the sky even more than the flying stars and the helicopters. They race towards the sky like firecrackers, erupting in short blazes of light. Some of the firecrackers are small and fast. They zip across the night. Bits of yellow and gray streaking across an inky darkness cut only by violent explosions. Others are big and slow, and they erupt in larger bursts of fire. These firecrackers are always accompanied by terrible wailing from the yellow sirens though. Sitting on top of houses all over the city like ancient karate masters in conical hats, the sirens look over the city. Their yellowness stings the eye during the day but is quite pleasant during the night when they usually stir from their sleep. Starting off slowly, the wailing gets louder and louder until all the wailing is joined together in a cacophonous chorus that erupts from the rooftops of the city. I wish that either the sirens would shut up or that my ears wouldn't work. My father has told me that the sirens are warning us of danger. I think the firecrackers might be dangerous.

24 years old

A total of 543,000 "coalition" troops were deployed to Saudi Arabia during Operations Desert Shield and Desert Storm to protect the oil fields of Saudi from Iraqi aggression. These troops were accompanied by several aircraft carrier groups, squadrons of F-15s, F-14s, F-117s, and Apache and Pave Low helicopters. Over a 100,000 sorties were conducted over the course of the war with over 88,500 tons of bombs dropped.

All these figures, numbers, code words make war seem like a lot of paperwork being shuffled around by bespectacled technocrats. Yet, "vectoring in strike elements" means forcing human beings to kill other human beings of a different skin color and language. "Sorties" are vicious bombing campaigns that inflict massive civilian damage. Words, just like any technology, create a specific discourse, which reflects existing power relations. In a more mundane manner, words can also be used to sanitize our atrocities. "Eliminating hostile forces" is a much better way to say "killing human beings in cold blood using technology developed by engineers who are well-meaning family men".

Scientific evidence leaves no question that Persian Gulf War illness is a real condition with real causes and serious consequences for affected veterans.

Report on Gulf War Syndrome by the Research Advisory Committee on Gulf War Veterans' Illnesses

Our aims and values....

ESJP is a network of academics, practitioners and students, in a range of disciplines related to Engineering, social justice, and peace, whose aims are to:

- Critique the current hegemony (current common-sense views that engineering is only about productivity, efficiency, and technical progress without due regard of consequence to marginalised people or to the environment), the role and practice of engineering in local and global communities, and its role in enhancing or reducing social justice.
- Develop ideas about alternative practices related to the way engineering is organised and managed, what it is that engineers do and who they do it for, how engineering contributes to global economies.
- Enhance our understanding of the way in which we educate engineers for a socially just world, considering curricula, pedagogy and institutional organisation, as well as alternative education practices.
- Discuss and debate the relationship of the public and how it engages with engineering practice, ideas about participatory engagement and public dialogue, policy making and needs analysis.

We work towards progressive, post development practices, which are non oppressive, non violent and which enhance gender, racial, class, and cultural equity.

Liquid Rubber - (noun), a coating applied to flight equipment to protect it from sand damage

They [Iraqi soldiers] took the babies out of the incubator, took the incubators, and left the babies to die on the cold floor.

Nurse Nayirah (an employee of the Hill & Knowlton public relations firm)

6 years old

I see it on TV first. It is darkness given form, menace embodied in steel, predator flying to prey. The words "F-117 Nighthawk" scroll across the TV screen. Nighthawk! Even the name inspires images of black birds swooping toward their targets with claws spread. The voice on the TV kept saying they were our friends and that they had come to help us. It was almost pleading for me to believe it. Why did we need these friends? The TV voice didn't sound too sure of itself. I don't think Nighthawks can be anyone's friend.

24 years old

Power comes in many forms, but, of course, the strength to inflict violence is one of the most potent forms of power. It is not just the violence itself that is powerful (hard power) but merely the threat of violence (soft power) can be power as well. The Nighthawks deployed by the Americans in the Gulf War must have inflicted great violence on their targets but I did not witness that part of the war. Instead, I witnessed the ease with which these Nighthawks freely roamed the skies of my country, free from the will of the people to whom that sky belonged. The Nighthawks used the threat of violence to stifle any resistance to American power. In the case of the Nighthawks, power was embodied in technology; technology that was designed by engineers. Just like discourse, technology influences and is representative of power imbalances between the human beings who design it.

Within three days, 120,000 Iraqi troops with 850 tanks had poured into Kuwait and moved south to threaten Saudi Arabia. It was then that I decided to act to check that aggression.

U.S. President George H.W. Bush

6 years old

Over the next few nights, the sky lights up with new stars. But these stars are different. They move very fast. They streak across the skies of my home making booming noises. Every day, there are even more stars in the sky. I'm scared that night will turn into day if enough stars streak across my home. These stars are often accompanied by more familiar beasts: helicopters. They rotor across our rooftops daring us to touch them. If you squint just right, you can see your fingers touching the twirling blades. The TV voice keeps insisting that I know about an "Operation Desert Shield". That makes no sense to me. Why would a desert need a shield? Perhaps, my English is not so good. I should pay more attention at school.

24 years old

Riyadh had been taken over as the main operations base for the Gulf War by "coalition" forces. It was going to be the "hub in the wheel" by serving as the central point for all troop/equipment movement during the war. Riyadh International Airport had gone from being a busy civilian airport into a staging area for sorties. The battleship carrier groups had come with their scores and scores of strike fighters, gunships, helicopters, missiles, guns, and artillery. They just kept coming day and night. No one had invited them to our country. No one had wanted to take part in this war. It seems power is not only manifested through violence or the threat of violence but also the daring and will to not bring certain issues up for debate. Non-negotiables. These are issues that are not even debated because there is no room in the discourse for such discussion. The idea of not using Saudi Arabia as a staging area for the war had not even come up for discussion. This was a non-negotiable: an item which did not even reach the table for discussion due to existing power imbalances.

Outlaw Hunter vectored in strike elements which attacked the flotilla near Bubiyan Island destroying 11 vessels and damaging scores more.

Wikipedia on the Gulf War