

IN THE HIGH COURT OF SOUTH AFRICA  
KWAZULU-NATAL DIVISION, PIETERMARITZBURG

CASE NO. 11488/17P

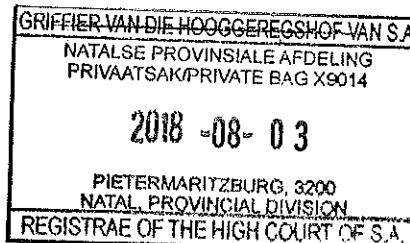
In the matter between:

**GLOBAL ENVIRONMENTAL TRUST** **FIRST APPLICANT**

**MFOLOZI COMMUNITY ENVIRONMENTAL  
JUSTICE ORGANISATION** **SECOND APPLICANT**

**SABELO DUMISANI DLADLA** **THIRD APPLICANT**

and



**TENDELE COAL MINING (PTY) LTD** **FIRST RESPONDENT**

**MINISTER OF MINERALS AND ENERGY** **SECOND RESPONDENT**

**MEC: DEPARTMENT OF ECONOMIC DEVELOPMENT,  
TOURISM AND ENVIRONMENTAL AFFAIRS** **THIRD RESPONDENT**

**MINISTER OF ENVIRONMENTAL AFFAIRS** **FOURTH RESPONDENT**

**MTUBATUBA MUNICIPALITY** **FIFTH RESPONDENT**

**HLABISA MUNICIPALITY** **SIXTH RESPONDENT**

**INGONYAMA TRUST** **SEVENTH RESPONDENT**

**EZEMVELO KZN WILDLIFE** **EIGHTH RESPONDENT**

**AMAFa aKWAZULU-NATALI HERITAGE  
COUNCIL** **NINTH RESPONDENT**

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**INDEX FOR AMICUS CURIAE AFFIDAVIT ON BEHALF OF APPLICANTS – VOLUME 1**

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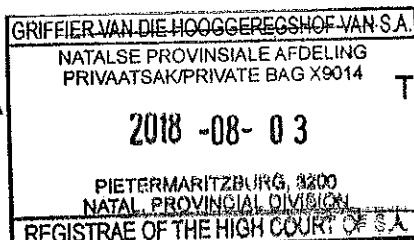
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HERITAGE COUNCIL NINTH RESPONDENT

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AMICUS CURIAE AFFIDAVIT ON BEHALF  
OF APPLICANTS

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I, the undersigned

**SABELO DUMISANI DLADLA**

do hereby make oath and say :-

1.

I am the Third Applicant herein. I made the main founding affidavit in the application.

2.

I am duly authorised to make this affidavit on behalf of all three Applicants.

3.

The purpose of this affidavit is to confirm the consent of Applicants to the proposed four amicus curiae being admitted as amicus curiae for the strict purposes of an amicus curiae in terms of the Rule. That is for the purposes of making submissions "which will assist the court and are different from those of other parties."

4.

As far as I can gather on a consideration of the application made by these Amici they have :-

- 4.1 at great length set out a factual background, a great deal of which is disputed by Applicants;
- 4.2 Made factual assertions which are disputed by Applicants;

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4.3 made submissions that are identical to those made by the opposing Respondents.

5.

In my submission the Amici do not add any value which will be of assistance to the above Honourable Court and their submissions will not be different from those already advanced in the opposing Respondents papers.

6.

In this instance and in the premises I submit that the Amici should be allowed to be admitted as Amici but that they should be restricted to making submissions only if they are different from those being made by the Applicants or the Respondents.

7.

As far as the mass of collateral factual material is concerned Applicants seek an order that it be struck out as irrelevant and that the Amici are restricted to making submissions that are original.

8.

I have been advised that in some cases the facts presented by Amici may be accepted in the interests of justice. I should record that Applicant's case is based on our rights under Section 24 of the Constitution 1996, coupled with the non-compliance with the law by First Respondent under the environmental legislation and notices, mining law, land use law and the legislation which protects graves. These are largely legal issues. The Amici hardly address these issues. They are

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more concerned with their own self-interest and the benefits to them that the mining brings, whether it is legal or not.

9.

This is why Applicants wish to have these irrelevant facts struck out. Not only are they irrelevant to the issues Applicant brings before the above Honourable Court but there is no time to deal with these issues at this stage of proceedings.

10.

In the event that any part of the mass of facts put forward are considered in the interests of justice to be relevant and important. I place the following before the above Honourable Court.

11.

Second Applicant has presently 2528 members. There are new members who are being processed from lists received recently, and more joining every day. This is because of the increased interest by the affected communities as the Court Hearing approaches. These members have an average of 10 dependants each. The numbers of people opposed to the mining and the unlawful activities of First Respondent are therefore at least 25 000 people. It is also due to the increased scope of the mining area.

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12.

The complete answer to the facts set out by the Amici is that it does not matter how much employment is needed or how it benefits those who are employed if the basis of the employment is not lawful or is illegal. It will be submitted at the hearing that the above Honourable Court must grant the interdicts sought if the argument of Applicants is sound. The Court will be asked by Applicants not to condone the illegality of First Respondent's operations on the basis of expediency.

13.

However, in the event of the above Honourable Court admitting the factual material provided by the Amici into evidence Applicant's provide contrary evidence which is set out in the following reports :-

- 13.1 The ActionAid Social Audit Report compiled by Sifiso Dladla and attached to his affidavit annexed hereto marked "SDD1".
- 13.2 A Pscyhosocial Impact Assessment by Michael R. Edelstein PhD, Professor of Environmental Psychology, Environmental and Studies Programs at Ramapo College of New Jersey and attached to his affidavit and curriculum vitae annexed hereto marked "SDD2".
- 13.3 The South African Human Rights Commission report referred to in clause 15.27 of my replying affidavit which was made available to us on 2 August 2018. I annex hereto a copy marked "SDD3".

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14.

Both Sifiso Dladla and Professor Michael Edelstein have visited the mining area and considered the effects of the mining on the people who live there. Their observations are highly relevant to counter the allegations made by the Amici that the mining is a great advantage to the people who live there.

15.

In the premises Applicants have the following stance on the application made by the Amici :-

15.1 Applicants consent to them being admitted as Amici;

15.2 That the Amici are admitted for the restricted purpose of making submissions which are different to the submissions made by other parties;

15.3 That the factual material provided by the Amici is struck out.

16.

Applicants ask for an order in these terms accordingly.

Dladla.

S.D. DLADLA

Recd.

SIGNED and SWORN to BEFORE ME, at Salt Rock on this 3<sup>rd</sup> day of August 2018, by the Deponent who has acknowledged that he knows and understands the contents of this affidavit, and he has declared that he has no objections to taking the oath, that he regards the oath as binding on his conscience and he has uttered the following words : "I swear that the contents of this Affidavit are true, so help me God".



---

**COMMISSIONER OF OATHS**

**JOHN PETER RUTSCH**  
COMMISSIONER OF OATHS  
PRACTISING ATTORNEY R.S.A.  
SALT ROCK SHOPPING CENTRE  
BASIL HULETT DR. SALT ROCK 439C

FULL NAME :  
ADDRESS :  
CAPACITY :  
AREA :

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AMAFA aKWAZULU-NATALI  
HERITAGE COUNCIL NINTH RESPONDENT

## AFFIDAVIT

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**COMMISSIONER OF OATHS**

**TSHWANE METROPOLITAN MUNICIPALITY**

I certify that the deponent has acknowledged that he/she knows and understands the contents of the statement/affidavit, that he/she does not have any objection in taking the prescribed oath and that he/she considers the oath to be binding on his/her conscience and which was sworn to/affirmed and signed in my presence.

I certify that this document is a true copy of the original, which I personally examined and through my observations found that the original has not been altered in any manner.

G.C. Pretorius on this 31 day of JULY 2018  
G.C. Pretorius PR G.C. PRETORIUS,  
 COMMISSIONER OF OATHS WARD PRINT NAME

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S.S.D.

# SOCIAL AUDITS

10th Floor, West Wing, 123 Jiao Shengfu Avenue  
Established in 1996  
Rosebank 21961



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# MPUKUNYONI

SOCIAL AUDIT REPORT

TENDELE COAL MINING

2018

Mr. S D

## PART A: INTRODUCTION TO SOCIAL AUDITS

### What is a social audit?

A social audit is a community-led process of reviewing crucial documents to determine whether the mine expenditure and service delivery outcomes promised by the mine really reflect the money spent and the experiences in the mining community.

Members of the community collectively participate in the process of verifying mine documents by comparing them with the realities on the ground and experiences of the community. Evidence collected during the audits is then reported to responsible stakeholders at a public meeting.

Community testimony, knowledge, and experiences are a legitimate and central part of this evidence. A social audit provides a way to build effective and meaningful participation in poor and working class communities by providing a means for community to engage with the mine process that affects their lives.

Social audits empower communities to gather and legitimise evidence of their experiences of service delivery, and through this process enables them to claim and realise their constitutional rights to a transparent and accountable mining company.

Social audits build community power, deepening the culture of participatory democracy and public deliberations. They provide an opportunity for poor mining communities to be heard, and space for people who have been excluded, deceived and cheated out of their benefits.



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## PART A: SOMKHELE HISTORY

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Somkhele has seven villages (Myeki, Mahujini, Ntandabantu, Esiyembeni, Machibini, Ugengele, Dubelenkhunzi) which are also part of the Mpukunyoni Community Area divided into 30 villages in total. The seven villages is where the mine has been mining to date and residents have been hard hit by mining operations.

Tendele Coal Mining, also referred to as Somkhele coal mine, was developed with promises of employment and community development. It was officially launched during the soil turning at Machibini village, in 2005, followed by the construction of the processing plant (where coal got crushed, washed and stockpiled) at Machibini Village. The first pit was commissioned from brown field site at Machibini village in 2017.

The second pit was established on the borders of Esiyembeni and Dubelenkhunzi towards the Mfolozi river, followed by a third pit at Kwaluhlanga and KwaQubuka (both at KwaMyeki Village).

Mahujini village is earmarked for expansion. Ntandabantu and Ugengele are areas to where the mine currently relocates people, causing confusion and congestion without proper town planning.

## PART B: NEED FOR A SOCIAL AUDIT

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Since Tendele Coal Mining arrived on the scene many residents at Mpukunyoni have suffered severe poverty and hardships as a result of being forced to move from their land - the source of their livelihoods and where their ancestors are buried. This has led to negative socio-economic impacts, displacement, loss of livelihoods, specific impacts on women, violation of human rights, loss of landscape/sense of place, etc. The district is known for its lack of water and sanitation. The situation is worse in Mtubatuba area because Somkhele mine uses underground water to wash its coal, increasing the area's water scarcity.

NB: There's a pattern where mining companies employ PR companies to write glossy reports about their social commitment that benefits mining communities. They sync these with the Social Labour Plan (SLP) commitments which on desktop paint a good picture that contradicts the realities on the ground. The only methodology to dispute this is to conduct social audits (community-led) and collect evidence which verifies the realities on the ground and challenges the glossy PR reports,

The reasons for the need to conduct this audit, a process that ran from January to June 2018, are as follows:

- Many Mpukunyoni community members, especially from the 7 villages mentioned above, complain about the existence of the mine saying that the mine does not keep its promises of job creation and community development.
- To assess the mine's claims of having spent R1,2 Billion for community development.

Before the mine was established, the Mpukunyoni Community had survived by practising sustainable traditional and agricultural activities, with some livestock farmers becoming very wealthy. There were also small local businesses, including shops and repair workshops. Now, the affected communities can no longer practise their traditions and agricultural activities and graze

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their livestock or run their businesses due to most of their land having been taken and fenced off by the mine, with the promise of development and job opportunities.

- In all villages mentioned above, relocations were haphazardly done with no proper and adequate consultation to give people enough time to deal with the issue of being moved from the area where they have lived for generations. Some people were forcefully removed to make way for the mine. People have lost their livelihoods because of the mine and suffered the trauma of ancestral graves being illegally dug up and their deceased relatives reburied in places they do not know.

**NB: the Social Audits were conducted using the Tendele Coal Mining's (a subsidiary of PETMIN) Social and Labour Plan together with Petmin's 2016 Integrated Report**

## WHAT IS A SOCIAL AND LABOUR PLAN?

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A social and labour plan (SLP) is a document that mining companies are required to submit to the Department of Mineral Resources (DMR) as part of their application for mining rights. It is a 5-year plan that must sync with the Integrated Development Plan (IDP) of a local municipality. SLP is a legally binding document that contains commitments made by the company on what it will do for both communities and workers. It also stipulates how and when commitments will be executed and what the budgets are for all promised interventions or activities.

SLPs are just one of the ways parliament is trying to address South Africa's long history of inequality in the mining sector. The Mineral and Petroleum Resources Development Act (MPRDA) states that mineral resources of the country are the common heritage of all who live in the country.

The purpose of the SLP is to promote employment, advance social and economic welfare, contribute to transforming the mining industry and ensure that mining companies contribute to the development of the areas where they operate.

In principle SLPs should be done with the consultation of the communities, however, that is not the case. Despite having strong laws in place, the reality is that the SLP system has been in force for over 12 years and most communities affected by mining still live in abject poverty. This is partly because SLPs are often designed without consulting communities who should benefit from them. It is also in large measure because not everything that is promised in a SLP is delivered, and DMR often does not follow up to regulate that the commitments made are being implemented.

## PART C: CONDUCTING THE SOCIAL AUDITS

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### 1. Objective

**NB:** The objective of the SLP is to ensure that the holder of mining or production rights contributes towards socio-economic development of the areas in which they are operating as per Section 2(i) of the MPRDA, and the Mining Charter. SLP's are renewed every 5 years and in this social audit we are looking into the SLP of 2013 to 2017.

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The Social Audits were conducted by ActionAid to:

1. Assess the extent of compliance with promises made to the community members of Somkhele;
2. Assess whether Tendele Coal Mining's SLP obligations are effective, efficient and provide sustainable goals for the community of Somkhele;
3. Determine if appropriate measures exist that:
  - establish, monitor and communicate SLP processes and procedures with the community;
  - ensure reliable information is available for all stakeholders involved including the Somkhele community; and
  - establish and communicate roles and responsibilities of all parties involved.

**2. Approach:**

**The approach for social audits includes the following steps:**

1. Holding a large meeting in the community and establishing a mandate
2. Preparing and organising the participants
3. Training participants
4. Analysing the Social Labour Plan
5. Developing and testing the social audits questionnaire
6. Gathering evidence
7. Capturing community experiences and testimonies
8. Agreeing on the main findings and organising evidence
9. Reflecting and follow up.

## PART D: OBSERVATIONS AND RESULTS

As part of the social audits 7 villages were visited: **Machibini, Ntandabantu, Myeki, Esiyembeni, Dubelenkhunzi, Mahujini and Ugengele**. In total 333 households were interviewed.

The recurring deficiencies identified during the social audits conducted using the Tendele Coal Mine's Social and Labour Plan for the year (2013-2017) and Petmin's 2016 Integrated Report show that an average of only 2 to 3% of the households interviewed know anything about the programmes or projects reported in these documents, and, of these, only a small percentage have benefitted in any way.

The questions and results are summarised in the table below:

### MYEKI-39 HOUSEHOLDS INTERVIEWED

ITEM	QUESTIONNAIRE	YES	NO	NA	COMMENTS WITH YEAR AND NUMBER
INTERNSHIP	Has anyone in the family received an internship from the mine	2	37		2014 (Code 14 Drivers licence)

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ABET/Learnership	Has anyone in the family received ABET training and or Learnership	2	37		
BURSARY	Has anyone in the family received a bursary		39		
LOCAL ECONOMIC DEVELOPMENT	Has anyone in the family received assistance in terms of LED		39		
AGRICULTURAL HUB	Does anyone in the family know about an Agricultural Hub		39		
WATER PROVISION	Does anyone in the family know about boreholes in the village		39		
TRAINING	Has anyone in the family received any training from the mine		39		
MATERNITY	Has anyone in the family received help from the maternity ward at Somkhele Clinic		39		

#### NTANDABANTU-57 HOUSEHOLDS INTERVIEWED

ITEM	QUESTIONNAIRE	YES	NO	NA	COMMENTS WITH YEAR AND NUMBER
INTERNSHIP	Has anyone in the family received an internship from the mine	2	55		2016/7(Plant operator)
ABET/Learnership	Has anyone in the family received ABET training and or Learnership	1	56		ABET 2013
BURSARY	Has anyone in the family received a bursary		57		
LOCAL ECONOMIC DEVELOPMENT	Has anyone in the family received assistance in terms of LED		57		
AGRICULTURAL HUB	Does anyone in the family know an Agricultural Hub		57		
WATER PROVISION	Does anyone in the family knows about boreholes in the village		57		
TRAINING	Has anyone in the family received any training from the mine		57		
MATERNITY WARD	Has anyone in the family received help from the maternity ward at Somkhele Clinic		57		

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## DUBELENKHUNZI-46 HOMEHOLDS INTERVIEWED

ITEM	QUESTIONNAIRE	YES	NO	NA	COMMENTS WITH YEAR AND NUMBER
INTERNSHIP	Has anyone in the family received an internship from the mine	3	43		
ABET/Learnership	Has anyone in the family received ABET training and or Learnership	1	45		ABET 2013
BURSARY	Has anyone in the family received a bursary	1	45		
LOCAL ECONOMIC DEVELOPMENT	Has anyone in the family received assistance in terms of LED	11	35		
AGRICULTURAL HUB	Does anyone in the family know an Agricultural Hub		46		
WATER PROVISION	Does anyone in the family knows about boreholes in the village		46		
TRAINING	Has anyone in the family received any training from the mine		46		
MATERNITY WARD	Has anyone in the family received help from the maternity ward at Somkhele Clinic		46		

## UGENGELE- 45 HOUSEHOLDS INTERVIEWED

ITEM	QUESTIONNAIRE	YES	NO	NA	COMMENTS WITH YEAR AND NUMBER
INTERNSHIP	Has anyone in the family received an internship from the mine		45		
ABET/Learnership	Has anyone in the family received ABET training and or Learnership	1	44		
BURSARY	Has anyone in the family received a bursary		45		
LOCAL ECONOMIC DEVELOPMENT	Has anyone in the family received assistance in terms of LED		45		
AGRICULTURAL HUB	Does anyone in the family know an Agricultural Hub	20	25		They didn't know about it until we explain but never participated or benefitted from the program.

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WATER PROVISION	Does anyone in the family knows about boreholes in the village		45		
TRAINING	Has anyone in the family received any training from the mine	2	43		
MATERNITY WARD	Has anyone in the family received help from the maternity ward at Somkhele Clinic		45		

#### MAHJINI- 48 HOUSEHOLDS INTERVIEWED

ITEM	QUESTIONNAIRE	YES	NO	NA	COMMENTS WITH YEAR AND NUMBER
INTERNSHIP	Has anyone in the family received an internship from the mine		48		
ABET/Learnership	Has anyone in the family received ABET training and or Learnership		48		
BURSARY	Has anyone in the family received a bursary		48		
LOCAL ECONOMIC DEVELOPMENT	Has anyone in the family received assistance in terms of LED		48		
AGRICULTURAL HUB	Does anyone in the family know an Agricultural Hub		48		
WATER PROVISION	Does anyone in the family knows about boreholes in the village		48		
TRAINING	Has anyone in the family received any training from the mine		48		
MATERNITY WARD	Has anyone in the family received help from the maternity ward at Somkhele Clinic		48		

#### MACHIBINI-39 HOUSEHOLD INTERVIEWED

ITEM	QUESTIONNAIRE	YES	NO	NA	COMMENTS WITH YEAR AND NUMBER
INTERNSHIP	Has anyone in the family received an internship from the mine	1	38		
ABET/Learnership	Has anyone in the family received ABET training and or Learnership	6	32		2010, 2015 & 2017 respectively.

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BURSARY	Has anyone in the family received a bursary	1	38		
LOCAL ECONOMIC DEVELOPMENT	Has anyone in the family received assistance in terms of LED	3	36		
AGRICULTURAL HUB	Does anyone in the family know an Agricultural Hub		39		
WATER PROVISION	Does anyone in the family knows about boreholes in the village		39		
TRAINING	Has anyone in the family received any training from the mine		39		
MATERNITY WARD	Has anyone in the family received help from the maternity ward at Somkhele Clinic		39		

#### ISIYEMBENI- 14 HOUSEHOLD INTERVIEWED

ITEM	QUESTIONNAIRE	YES	NO	NA	COMMENTS WITH YEAR AND NUMBER
INTERNSHIP	Has anyone in the family received an internship from the mine		14		
ABET/Learnership	Has anyone in the family received ABET training and or Learnership		14		
BURSARY	Has anyone in the family received a bursary		14		
LOCAL ECONOMIC DEVELOPMENT	Has anyone in the family received assistance in terms of LED		14		
AGRICULTURAL HUB	Does anyone in the family know an Agricultural Hub		14		
WATER PROVISION	Does anyone in the family knows about boreholes in the village		14		
TRAINING	Has anyone in the family received any training from the training centre		14		
MATERNITY WARD	Has anyone in the family received help from the maternity ward at Somkhele Clinic		14		

AUDITS VARIABLES	OBSERVED TRENDS	COMMENTS

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INTERNSHIP	98% of people interviewed don't know of any internship offered by the mine.	
ABET/LEARNSHIPS	96.7% of the community members know nothing about ABET and Learnerships. 3.83% who attended the ABET program dropped out because they started the training believing they would be employed after the program and left when they realised this was not the case.	The mine in its 2016 Integrated Report claimed that 600 participated in the ABET program. This contradicts with the evidence obtained during social audits and physical verification conducted.
BURSARY	99.3% people interviewed don't know of anyone who had ever received a Bursary from the mine between 2013-2017. Only 3 people 0.7% of those who received a bursary have received it through relatives working at the mine	
LOCAL ECONOMIC DEVELOPMENT	94.1% of the community don't know anything about Local Economic Development offered by the mine. Only 5.9% knows about it but have never actually benefitted from the program.	Although the mine claims to have been spent R56 Million on the Local Economic Development, which was to create employment opportunities within Mpukunyoni, the community still face abject poverty and even higher rates of unemployment since self-employed farmers and business owners lost their land.
AGRICULTURAL HUB	91.32 % of the households have never heard of the Agricultural Hub even though most of them have small farms within their homestead. 8.68 % knows about the hub but never benefitted from it.	In its 2016 Integrated Report the mine claimed to have trained 600 households in organic crop farming and they help them market their crops however this contradicts the community-led social audits and physical verification.
WATER PROVISION	100% of the households know nothing about the water provision which the mine committed to provide between year 2013-2017	Most community members rely on harvesting rain water even though the mine claims to be trucking 192,000 litres each week to mining communities, fitted new hand pumps and repaired boreholes.

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TRAINING	99.31% of the people interviewed know nothing about the training centre and training provided by the mine. Only 0.69% of the 7 villages visited know and have participated in the trainings	Community members still lives without necessary skills that will enable them to prepare and enter the job market although the mine claimed to have been created a training and skills centre which also contradicts the verification and evidence obtained from the social audits.
MATERNIY WARD	5,6% of people interviewed know about the maternity ward whereas 94,4% know nothing about the maternity ward in Somkhele clinic.	Those who know about the maternity ward there are those who state the ward is not well equipped to meet their expected duties. There midwives are not well trained and there are no doctors.

## PART D: ANALYSIS AND SUMMARY

Tendele Coal Mining repeatedly claims to have spent R1.2 billion for community development but it has yet to provide substantive evidence to support these claims. Many of the people who were interviewed still face abject poverty. Unemployment rates are even higher in the area as a result of previously self-employed farmers and small business owners losing their land to the mine, and now being part of the ranks of unemployed Somkhele residents.

### THE MINE COMMITTED TO UNDERTAKE THE FOLLOWING DURING THE SLP YEARS AUDITED:

1. The SLP commitment was to train 480 community members in ABET Levels 1-4 by 2017. The budget for this is not allocated so that it is difficult for the mine to be held accountable.
2. There was also a commitment to provide 50 learnerships (10 per SLP year) for community members to undergo trainings on earthmoving machines, driver's licenses and N1-N4. Again, it is observed that it was not clearly indicated as to what the N1-N4 training included.
3. There was a commitment to provided 20 internships by the end of 2017 (4 interns per SLP year). This was to be given preference to community members on subjects of "core and scarce mining". Interns were to be given a stipend of R3500 per month. The table above indicates that 98% of people interviewed know nothing about this commitment or the identity of 20 interns, therefore we conclude that it is most unlikely this quota was met.
4. There was a commitment to provide 10 study bursaries to community members: 8 were to study "any mine-related field" and 2 would embark on a "community related field". The criteria used to award community members with these bursaries was not stipulated.

The above table states that 99.3% of the people interviewed do not know of anyone who had ever received a Bursary from the mine between 2013-2017. Only 3 people know someone who received a bursary and these bursaries were awarded because a family

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member works at the mine. One of the interviewers mentioned someone who was awarded a bursary to study medicine, not the abovementioned fields.

5. There was a commitment to construct an agricultural hub which will help local farmers to produce and sell via the hub. This was going to assist to address the issue of water by providing agricultural infrastructure which includes tunnels, roof water and underground rainwater harvesting tanks. Training was to be provided for farmers to be able to operate commercial farms. The budget for this commitment was R7 123 135.00. This budget was for the 5 years of the SLP, however, it does not stipulate whether it will be used for construction only or if this included implementation of the mentioned activities.

Observation from the group was that tunnels were brought on to this piece of land close to the traditional court but people did not know what they were for. Inquisitive community members went to check and are willing to corroborate that the project has never taken off – certainly not at the scale proposed in the SLP. People who live close by to the project did not even know what it was.

When the audit team wanted to conduct physical verifications during the social audits, they were denied access and told to go and ask for permission at the mine. Some community members state that they thought the Agrihub was a waiting office for the mine when people come to meetings with the traditional council, as they always do.

6. A commitment of water provision was made stating that boreholes will be created and equipped with hand-pumps. A budget of R1,5 million was set aside for this project that was to be for duration of the 5-year SLP. None of the people interviewed during the social audits knows about this commitment.
7. Tendele Coal Mine committed to constructing a maternity ward in Somkhele clinic to ensure that women do not travel far to give birth. The SLP states that the company will enter into a memorandum with the Department of Health that agreed to provide nursing personnel and equipment. The total budget for this commitment is R1,5 million.

The maternity ward has been built and the mine prides itself very much about this. However, only 5,6% of people interviewed know about the maternity ward in the Somkhele clinic, while 94,4% know nothing about it. Reports from those interviewed who have had reason to visit the maternity ward state it is not well equipped to meet its expected tasks. There midwives are not well trained and there are no doctors. One report was of a heavily pregnant woman who went to the clinic but did not find help. She was suffering from high blood pressure and was turned away from the clinic. She later went to Hlabisa Hospital where she gave birth to a stillborn child. It is very likely this incident has not been investigated but through social audits we have a duty to dig deep into this.

The social audit team was denied access during the social audits when we wanted to undertake a physical verification. To enter the clinic, we were directed by security personnel to get permission at Hlabisa Hospital which is 40 KM away! We were confused because if we had to be referred anywhere it should have been to the uMkhanyakude District Department, situated in Jozini. The SLP states consulting with the Department of Health in designing and building the maternity ward but we have yet to obtain evidence to confirm this consultation

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has taken place and what the relationship is between the Department of Health and the Somkhele maternity ward.

The purpose of the physical verification was to check if the maternity ward meets required standards; how many babies can be delivered at a time; if the delivery room and nursery are available and up to standard because the two must be separated; if the equipment used during delivery is correct and adequate; if the maternity ward is accessible for women with physical challenges. We also wanted to verify support staff, like doctors and nurses.

8. A training centre was to be established (not constructed). As the SLP commitment stated, this is to be done in partnership with Umfolozi FET college. In addition, a learning centre would be established within the training centre to cater for grades 8 – 12 to attend on weekends to study Maths, Science, Biology and English. The learning centre would be equipped with e-learning and educators will be trained to use the system. It is further mentioned that the programme will be linked to the mine's bursary and career programmes with links to the agricultural hub. The budget for this stood at R1,54 million.

The audit team was once again denied access to the centre and a mine manager called and requested to speak with us. He informed us to make an appointment if we wanted to enter the building. The above table states that 99% of people we spoke to do not know anything about this centre. Those who know about the centre don't have an idea what is happening there. Regarding the structure, the building was already there and all the mine did was to refurbish it. The quality of education and training it offers is questionable.

9. There was a commitment to Ingaza Special School in Machibini village that caters for learners with disabilities. A budget of R1,05 million, divided as follows, was to provide:
  - A hall for general school activities as well as a special needs workshops. R650 000
  - Boreholes especially for the cleaning needs of disabled learners. R100 000
  - Showers with a geyser R200 000
  - Two wheelchairs R5 000
  - General refurbishment which includes amongst other things, fixing toilets, establishing a vegetable garden, electrical wiring and installing ceilings at R95 000.

We met and interviewed the principal of the school who was shocked to hear of the commitments made by the mine, not to mention the figures, which prompted her to request a meeting with the traditional council. We have no knowledge of what transpired at that meeting. Physical verification showed us that nothing was done. The only thing the principal can recall was the handing over of seedlings to her school. This serves to confirm that when the SLP commitments were formulated, there was no consultation with the school, contrary to the requirements of drafting a SLP.

In summary, the social audits that took place from January to June 2018 make it clear that there is an enormous discrepancy between what the mine purports it has done and the reality on the ground.

The mine's Social and Labour Plan (2013-2017) commits the mine to spending R56 Million on Local Economic Development to create employment opportunities within Mpukunyoni. This is not supported by the results on the ground.

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Of the 333 households interviewed in the seven villages directly affected by Somkhele mine, only 2%, or an average of 3 households, have heard about Internship, ABET/Learnership and Bursary programmes that the mine has supposedly rolled out in the community over the past five years. The vast majority (99.31%) of the people interviewed know nothing about the training centre and training provided by the mine. Only 0.69% of the households in the seven village visited know and have participated in the trainings.

In its 2016 Integrated Report, the mine claims that 600 people participated in the ABET program but the information obtained during social audits and physical verification provides contradictory evidence and casts serious doubt on the veracity of this claim. Only 10 households reported that family members had attended ABET training and, of these, 3 reported that they had dropped out of the course when they realised it would not result in a job on the mine.

Similarly, the 2016 Integrated Report claims to have trained 600 households in organic crop farming and helped them market their crops. Only 8% of the households interviewed have heard of the Agricultural Hub even though most of them have small farms within their homesteads and they travel past the Agrihub every time they travel to Mtubatuba. None of the interviewed households participated in the mine's organic crop farming training.

100% of the interviewed households know nothing about the water provision that the mine committed to provide between 2013-2017.

In addition to the standardised questions that were asked during the social audit, many issues were raised by members of the community and institutions that the SLP mentions as being supported by Tendele Coal Mining and having benefitted. Then there are schools and numerous residents in the vicinity of the mine who have not benefitted at all, and whose complaints and pleas for assistance to repair or replace dangerously cracked buildings/homes continue to be ignored.

It goes beyond the scope of the social audits to investigate the validity of the mine's claims of providing more than 1000 jobs to local people but this figure is contested by local residents who estimate the mine provides no more than 300 local jobs. There are also questions relating to the R2-million worth of shares that Petmin awarded to the people of Mpukunyoni in 2016 that needs a separate in-depth enquiry.

## PART E: CONCLUSIONS

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We believe there is sufficient evidence for DMR to do an in-depth audit that requires Tendele Coal Mining to provide detailed documentation of the claims in their SLP and Integrated Report which the recent social audits call seriously into question. There is an urgent need for DMR to produce Tendele's annual SLP compliance reports for the years 2013 to 2017. The mine must be called on to provide clear evidence and substantive proof of the actual benefits arising for the Mpukunyoni residents, particularly from villages directly affected by the mine, from its commitments for this 5 year period. This includes physical verification of each project and bringing forward the direct beneficiaries.

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In addition, there is a call from the affected communities for the government to employ an independent economist to calculate the costs and losses that the Mpukunyoni community has had to bear since Tendele Coal Mining started its operations in Somkhele in 2005.

Date: 27 July 2018

Signed:



SS DLADLA

Sifiso Dladla – Co-ordinator of Social Audit

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ActionAid is a global movement of people working together to further human rights for all and defeat poverty.

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IN THE HIGH COURT OF SOUTH AFRICA

KWAZULU-NATAL DIVISION, PIETERMARITZBURG.

CASE NO

11328/178

In the matter between :

GLOBAL ENVIRONMENTAL TRUST

1. PLAINTIFF

MFOLOZI COMMUNITY ENVIRONMENTAL  
JUSTICE ORGANISATION

2. DEFENDANT

SABELO DUMISANI DLADLA

3. DEFENDANT

and

TENDELE COAL MINING (PTY) LTD

4. FIRST RESPONDENT

MINISTER OF MINERALS AND ENERGY

5. SECOND RESPONDENT

MEC : DEPARTMENT OF ECONOMIC  
DEVELOPMENT, TOURISM AND  
ENVIRONMENTAL AFFAIRS

6. THIRD RESPONDENT

MINISTER OF ENVIRONMENTAL AFFAIRS

7. FOURTH RESPONDENT

MTUBATUBA MUNICIPALITY

8. FIFTH RESPONDENT

HLABISA MUNICIPALITY

9. SIXTH RESPONDENT

INGONYAMA TRUST

10. SEVENTH RESPONDENT

EZEMVELO KZN WILDLIFE

11. EIGHTH RESPONDENT

AMAFa aKWAZULU-NATALI  
HERITAGE COUNCIL

12. NINTH RESPONDENT

**AFFIDAVIT**

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I, the undersigned

MICHAEL R. EDELSTEIN

do hereby make oath and say .

1

I am an adult male Professor of Environmental Psychology at Ramapo College of New Jersey, in the United States of America.

2.

I confirm that the curriculum vitae dated 28 February 2018 and headed "Vita MICHAEL R. EDELSTEIN, Ph.D." sets out my background and professional work record and is true and correct, save where the context indicates otherwise.

3.

I visited the communities affected by the coal mining of the Tendele Coal Mining (Pty) Ltd in the Mpukunyoni area of KwaZulu-Natal in South Africa in May 2018.

4.

I confirm that I wrote a PsychoSocial Impact Assessment Report dated 2 August 2018 and headed "Psycho-Social Impacts Associated with Tendele Coal Mine".

5.

I confirm my observations and conclusions set out in this Report and that

Re. SD

the contents of the report are both true and correct save where the context indicates otherwise.



MICHAEL R. EDELESTIN III

SIGNED and SWORN to BEFORE ME, at  
on this 2d day of August 2018, by the Deposent  
who has acknowledged that he knows and understands the contents of the  
affidavit, and he has declared that he has no objections to taking the oath  
that he regards the oath as binding on his conscience and he has uttered the  
following words : "I swear that the contents of this Affidavit are true, so help  
me God".



NOTARY PUBLIC

SCOTT THORNTON  
Notary Public, State of New York  
No. 02TH5012017  
Qualified in Orange County  
Commission Expires 11/21/2019

FULL NAME :  
ADDRESS :  
CAPACITY :  
AREA :

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## Psycho-Social Impacts Associated with Tendele Coal Mine

Michael R. Edelstein, Ph.D.

July 31, 2018

In the matter of Global Environmental Trust, Mfolozi Community  
Environmental Justice Organization and Sabelo Dumisani Dladla vs. Tendele  
Coal Mining, et.al.

### Introduction and Scope of Review

This report addresses the Psycho-Social Impacts associated with living in proximity to the Tendele Coal Mine in Kwazulu-Natal, South Africa. It is submitted in support of the motion (as amended) brought by the Global Environmental Trust and other applicants to stop mining in designated areas of the lands owned by Tendele Coal Mining (PTY) LTD, principally in the Somkhele Area (Case 11488/17P).

I hold a Ph.D. from the University of Buffalo in Social Psychology and have worked in the field of Environmental Psychology my entire career. Beginning in the late 1970s, I began the study of communities living around noxious, contaminated and contaminating facilities, an area of my continuing research, writing and testimony. My book *Contaminated Communities* (Westview, 1988; second edition, 2004), described as the classic in its field, established the Psycho-Social Impacts associated with such facilities and a method for their study. I have been a Professor in the Environmental Studies and Sustainability Programs at Ramapo College of New Jersey for 44 years, frequently addressing these issues in my courses, project work and presentations. The practice of Psycho-Social Impact Assessment has dominated my academic work, consulting and professional communications throughout my career.

A year ago, I gave a two-part webinar on the subject of Psycho-Social Impact Assessment at the request of IAIA, the International Association of Impact Assessment. IAIA is the premier international organization associated with the overall field of Environmental Impact Assessment.

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In June 2018, I spoke at the annual IAIA meeting in Durban, South Africa on the topic of Environmental Justice Impact Assessment. I also chaired a session I had organized on Psycho-Social Impact Assessment. At the completion of the conference, my wife and I attended a field study organized by IAIA which brought us to the magnificent Hluhluwe-iMfolozi Park. On the way to the park, I observed the local communities and a large coal mine, noting the proximity between the two and contemplating the consequences (see Figure 1).

In addition to safaris, we were given several insightful lectures on the park that addressed challenges to protecting wildlife and the changes to the environment around the park. The next day, we got a further look at the mine and communities on the way to Thula-Thula, where we heard presentations by plaintiff Sabelo Dladla and attorney Kirsten Youens discussing and illustrating impacts of the Tendele Mine on the surrounding community. They showed graphic pictures to underscore their statements. Being very familiar with such impact issues as a result of my forty years of work, I found these presentations to be informative and credible. I also realized that my professional expertise might provide a useful way to highlight the significance of some impacts during this proceeding and offered my pro bono assistance.

Over the past few days, I have additionally reviewed some materials from the proceedings, specifically the Notice of Motions, the affidavits of Sabelo Dumisani Dladla and Sheila Berry for the Global Environmental Trust, the Answering Affidavit and Amendment, the First Respondent's Replying Affidavit and the Amicus Submissions. I have also reviewed a report by Action Aid that is pertinent to this matter, and I asked my colleague Dr. Francesca Scafuto to analyze 96 plaintiff questionnaires representing a total of 710 family members.<sup>1</sup> All of these materials were provided by Attorney Kirsten Youens.

I base the judgments presented below on my direct observations, the presentations I heard and a review of the additional materials provided to me. In light of my extensive expertise on Psycho-Social Impact, I have full confidence in my ability to draw the conclusions presented in this report.

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<sup>1</sup> Citations to these questionnaires uses the letter Q followed by the respondent's name.

## 31 The Theory of Environmental Turbulence

My work on Psycho-Social Impacts derives from my theory of Environmental Turbulence, a term that references the disruption and harm caused to affected people by often chronic and protracted human-caused adverse environmental change. Impacts from Environmental Turbulence may vary over the lifecycle, affecting children, adolescents, young adults, and elders differently. In a Psycho-Social Impact Assessment, I primarily examine impacts according to the three principle areas of concern to Psychology: cognition, behavior and emotion.

Cognitive---or "lifescape"---impacts involve contradictions to the normal assumptions underlying everyday life, causing us to rethink our health, how much control we exercise over our lives, the security of home and community, the safety of the environment, the ability to earn a livelihood and the ability to trust one's social and institutional networks. Environmental Stigma may occur. Lifescape impacts may affect individuals or groups, including families, communities, organizations and institutions, and even the whole society. They are affected by the Eco-Historical Context, the environmental and social/cultural baseline of an affected population.

Lifestyle---the behaviors and activities that comprise everyday life---are also subject to change because of environmental turbulence. Affected people may adjust their behavior to avoid exposure to environmental hazards or reminder of undesired changes. Customary water sources may be avoided, gardens abandoned, yards or areas made off-limits to children, houses may be shut tight to keep out polluted air even in the heat or degraded viewsheds may be avoided.

Lifestrain is experienced with any stressful life event. But environmental turbulence adds more and new stressors that may exceed the capacity for coping. There may be considerable fear and uncertainty introduced into formerly settled lives. Or lives already in turmoil are pushed to more. Often, additional secondary stressors result, such as tensions between people over how to deal with changed circumstances, feelings of inadequacy to the new situation, guilt due to an inability to protect one's family, forced adaptation to undesired conditions, discomfort and unhappiness, and a forced and disabling dependence on others to determine what to do. Of particular import with

instances of human-caused harm are feelings of anger and blame, a sense of injustice and wrong, and feelings of unnecessary and unfair loss. A wide range of mental health and psychological dysfunctions may interact with or result from such circumstances, further complicating the ability to make effective responses.

Often in the face of Environmental Turbulence, grass roots leaders emerge to unite similarly affected neighbors and promote actions that collectively enable those with no individual efficacy.

## Findings

While an extensive Psycho-Social study of the subject is warranted, sufficient information is available to provide evidence of Psycho-Social impact and support the conclusion that construction and operation of the Tendele mine has been a source of Environmental Turbulence for the Mpukonyoni Community. Here I will discuss some of the evidence.

### Landscape Impacts

Impact from the Tendele Mine has affected how residents of surrounding communities think about themselves and their environment. This is evident when we examine the components of landscape.

#### People No Longer Feel Healthy

Berry, who had experience in the Mpukonyoni area before the mine going back to 1983, recalls that she found "the people of the communities there were healthy and had few complaints. In recent years there has been a growth of complaints about respiratory diseases, asthma and bronchitis. The quality of their lives has been dramatically affected."(6) When one considers the environmental exposures associated with the mine, discussed below, this is not surprising.

Changes in the health of one's person, family and community may result in a major landscape shift. Whereas formerly, people considered themselves healthy, as the Berry observation suggests, responses to the questionnaire suggests that they may now see themselves as beset by illness. Illness as a defining condition

is debilitating psychologically as well as, potentially, physically. It can become a preoccupation and sometimes an obsession, taking over as a focus of life.

A review of the questionnaires provided amplifies this point. A substantial number of diseases are reported among families, including conditions found at birth. Among the illnesses most reported are breathing problems, asthma, coughing, TB, eye problems, sinus conditions and dermatological symptoms (i.e., skin cracking). Severe coughing in some cases has persisted for a decade, affecting people across the lifecycle. In some instances, health problems have prevented people from conducting their prior activities, as in one case where a respondent reported that his eye problems kept him from continuing to farm cattle (Q: Thando Gloria Shardo). Respiratory diseases and Tuberculosis were reported as the cause of death in some families (Q: Nomathemba Ndlovu). Every family reported at least one disease, with most more than three.

Illness can cause tragic secondary impacts, as well. When Jusia Myaazi died from an asthma attack in 2010, two years after being relocated by the mining company (Q: Zama Mbonambi); his wife subsequently committed suicide. While the causality of this particular string of events may be more complicated, it nonetheless illustrates a plausible sequence where illness caused by contaminants from the mine brought tragedy to a family where the wife was unable to cope with the loss of her husband. Psychological problems are frequently connected to contamination effects through such chains of causality.

While people appear to believe that illness is related to coal mine exposures, the causality is uncertain. Perhaps for this reason, despite the commonality of disease attributed to the coal mine, not all of the respondents complained to Tendele about health problems. The most common complaints addressed much more concrete problems---water supply, cracks in the houses, dust and the loss of the land and graves.

The Zulu people have a long history on the land and extensive indigenous knowledge with how to cure illness using traditional herbs. As suggested by the interviews, the fencing off of the mine property and devastation of the landscape had brought about a secondary complication. It was not impossible to forage for health remedies because those remedies were now covered by slag.

## Personal Control is Lost

Berry reports that Mpukonyoni residents "used to live as rural farmers and some of them were wealthy." (Global Trust Berry at 6) The abrupt change in their local environment caused by the development and operation of the Tendele mine came without warning to the community or their consent and perhaps, as plaintiff's motions suggest, also without regulatory review or approval. Moreover, as Dladla (3rd Applicant, 2018) suggests, the Mngeza traditional council may have known and approved the mine without the knowledge and consent of the community they represented.

In relatively short order, community members found their environment fenced off, constricting age-old farming and herding practices, their sacred burial sites disturbed, their families exposed to environmental hazards, their herds cut off from grazing and their homes threatened. All of these events were inherently "disabling" in the sense that tried and true methods for managing life no longer worked. It was an entirely new reality with new rules. And the community was not only not in charge, but it was not consulted and its comments were apparently ignored. And government was not coming to their aid.

## Home and Community Are No Longer Secure

In my work, I speak about home as a place of shelter, security, identity, family and property. While the rural residences of Kwa-Zulu Natal, notable from afar for their unique round structures, are certainly different from most of the communities I have studied, I suspect these values of home are roughly the same. After a contaminating change, I further describe what I call the "inversion of home," a transformation from a place where one loves to be to a place one would love to escape. The idea of escape is complicated for indigenous peoples, I have discovered from my work, because of the deep attachment to land, the strong sense of community, the reliance on local foods and medicines, the belief in gods of place and the responsibility to care for the burial places of ancestors. While I do not know the specifics for the Zulu people, there is ample evidence that home and community have been inverted by the Tendele mine.

First, there is the issue of historic residency and the tight bond to place that results. According to the Affidavit by 3<sup>rd</sup> Applicant Sabelo Dladla, Tendele

Mine sits on land that "is the residence of the communities that have always lived there. The fenced off areas of the Tendele Mine include some houses of people who have always lived there. This has caused grave dissent over the years" (Dladla at 87)"

Dladla summarizes the inversion of home thoroughly in his affidavit. Citing irreparable harm done to Mpukonyoni residents, including his own family, he points to an environment polluted by dust and noise and homes that often have been moved or destroyed. Left to operate, he predicts that the mine will destroy the local "environment and amenity....The tranquil rural environment that used to exist is being destroyed day by day" (Dladla at 98). He then continues that "the quality of the material environment has been materially affected....What was once a quiet rural setting alongside the Wilderness area is now a vast industrial rock dump." (Dladla at 99) He illustrated the proximity of the homes to the mine by showing a picture of a rural household dwelling set against a background of mine dump (Dladla at 100a). By chance, on my way to the nature reserve, I took a picture (Figure 1) of the mine that shows houses in the background (see the upper left).

Youens (2018) confirms that home was literally inverted for some residents, who were forcibly relocated from their homes to make way for the mine without adequate consultation or compensation for their losses.

These same findings were made by ActionAid in their social audit of the mine. They conclude that relocations were haphazardly done without proper and adequate consultation to give people enough time to deal with the issue of being moved from the area where they have lived for generations. Some people were forcefully removed to make way for the mine. People have lost their livelihoods because of the mine and suffered the trauma of ancestral graves being illegally dug up and their deceased relatives reburied in places they do not know (2018).

Where residents accepted replacement homes, they have complained of shoddy construction. She also makes reference to the impacts of blasting at the mine, which has served to degrade homes, in some case collapsing walls or the entire structure (Youens 2018).

All of the questionnaires report cracks and collapsed walls caused by coal mine blasting. The situation is interesting because residents of deteriorating buildings reside in them even as they witness the spread of cracks in the structure around them. The loud retort of an explosion is thus paired with the fear that this blast will be the one to collapse one's home on top of the occupants. Indeed, one of the major complaints made to the coal mine by residents was that their house had become dangerous; it was no longer safe shelter.

Relocation of course may imply separation from lands held dear and sacred and from a community fundamentally important to the life of an indigenous person who thinks of the group before the individual.

The analysis of the questionnaires confirms the plight of community residents. Their huts and rondavels had served as gathering places for hosting their huge families. They may be caught in a trap if not compensated to relocate. But relocation comes with ambivalence. They want to move to a safer place, but do not want to leave place and extended family and community.

There is one other aspect of intrusion into home and community that is rather unique to this situation. According to Youens (2018), the mine has exhumed and relocated graves of the residents' ancestors, both in violation of the law and cultural norms. This intrusion is discussed below under social distrust.

#### The Environment is Unsafe

Berry attests to knowing the area before the mine as "quiet and peaceful and the people of the communities there were healthy and had few complaints." (Global Environmental Trust, Berry at 6). In contrast to this description from before mining, she observes that, now, the open cast coal mining is "ugly, dusty and noisy and the landscape has been destroyed. The blasting has its effect on the peace of the area and it shakes the ground." (Global Environmental Trust, Berry at 7)

These issues are, on one hand, issues of aesthetics. They address the difference between a beautiful, quiet and peaceful landscape joined to a historic park preserve and a disfigured landscape that evokes horror and fear.

But, while aesthetics are vitally important, this transformation of environment represents much, much more. There are real hazards here. Take the issue of noise. According to Youens (2018) and Dladla (2018), residents can hear blasting from the mine. Berry notes that the intensity of the blast can be felt for kilometres (Global Environmental Trust, Berry at 7)

These are not rhythmic and thus predictable events. Except when given a half hour alarm warning, itself an intrusion, these noise impacts are aperiodic and thus unpredictable. Such irruptive noises have the greatest adverse impact, affecting focus, study, conversation, rest, sleep and overall composure. Additionally, depending on the intensity of the sound, hearing loss may result. Moreover, as noted, the vibration degrades structures over time.

Then there is the issue of environmental contamination. Some of it is visible, some invisible and left to the imagination. But all of it erodes trust in the environment as a place of safety.

Berry comments that the large rock stockpiles and the coal extraction and washing operations have "made the area 'filthy' with dust and dirty water" (Global Environmental Trust, Berry at 8).

Coal dust is released to the local environment from the mine blasting and operation and represents a source of particulate exposure to residents, exacerbating or causing lung conditions including asthma. Dust also gets in the eyes, on food, in water; dust coats surfaces, resulting in an inability to keep homes and other buildings clean. Windows become coated in dust. Window sills collect dust. At the minimum, coal dust is considered to be a constant nuisance. In all likelihood, many consider it to be an active threat. In these ways, dust is a continuing hazard. A repeated message, dusts remind residents that their environment is contaminated.

In addition to coal dust in the air on all surfaces, including water sources, acid mine drainage has leached into water bodies and tainted residents sources of fresh and irrigation water. Moreover, by-products of the mining operation include stockpiles of waste rock and coal sludge, as well as liquid coal waste in the form of slurry water contaminated with such the heavy metals as mercury, arsenic, beryllium, cadmium, nickel and selenium (Youens 2018; Dladla at 94).

Beyond the environmental harms directly caused by the mine that have rendered the local environment unsafe, mining has degraded the health of the local environment. As a result, residents are living in a place that lacks the historic health, environmental integrity and quality previously enjoyed.

These issues are very much noticed by community members, as indicated by the questionnaires reviewed. Residents mentioned the presence of poisons in the water and soil and complained about the contaminated water and dust on the plants. They further realized that their environment is contaminated by witnessing unprecedented deaths of their goats and stunted crop growth in their fields (Q: Grace Magumbane, Ayanda Ngqulungu). Their sense of risk was amplified by the blasting and ubiquitous dust.

### Impaired Livelihood

Before the mine was established, the Mpukunyoni Community practiced sustainable traditional and agricultural activities. Besides the farms, there were small businesses, such as repair shops. Now the shops and the farms are gone. When most of the land was taken and fences were erected, none of these livelihoods could be practiced (ActionAid, 2018).

One of the issues noted by Youens (2018) is that when the mine property was fenced, residents were cut off from water sources that they previously relied upon. Similarly, she notes that they were at times cut off from formerly used arable land upon which they had grown crops. In this and other ways discussed, the mine has been a threat to the community members' livelihood.

Nonetheless, the mining company has made claims of job creation, training, water supply, better health and substantial economic development. According to these claims, the community should be substantially better off since the mine began operations. An organization called ActionAid did a social audit of the mine's implementation of promised programs in 2018.

The Social Audit conducted by ActionAid examined whether claims by Tendele Coal Mining to have instituted various training programs, a maternity health program and substantial economic development were true. They interviewed 333 households in 7 villages. Contrary to claims made by the mine, they found minimal knowledge about or participation in the promised internships, training and assistance programs, little indication of the promised economic

development and few people receiving promised water supply. The few people familiar with the promised maternity ward regarded it as poorly staffed and equipped. The report concludes that the mine increased unemployment because farmers and small business owners lost their land and ceased business. Residents still live in abject poverty, have poor sanitation and water resources. There are specific adverse impacts on women and violations of human rights (2018).

The analysis of the questionnaires further demonstrates that the traditional livelihood of the Mpukunyoni residents has been adversely affected because of the loss of land, shortage of water and contamination of the soil by the Tendele mine.

Local residents had grazed the entire area prior to 2009, when land was fenced off for mining. The action came as a surprise as residents had not been consulted nor warned of the impending construction of the mine. To further complicate matters, residents' cattle were used to roaming the area now off limits and continually sought reentry (Dladla at 106-107). And the cattle---and residences---were very close to the restricted area. Dladla shared pictures of cattle and household animals close to the mine dumps (Dladla at 100, a and b). Noting that his own family lost cattle who wandered into the mine through a poorly maintained fence, Dladla graphically describes how one of his cows was crushed under rocks being dumped at the site and had to be mercifully slaughtered. Another cow died when it got stuck in mud on the mining site (Dladla at 105, 107-8).<sup>2</sup> The tragedy of the dead cows was compounded when Dladla's request for compensation went nowhere because Tendele evaded meeting with him. In addition, all 15 of his family's goats disappeared, going into the mine property and not returning (Dladla at 110-111).

Water for cattle was also made scarce by the mining operation, as described below. The end result is that residents have to graze their cattle far away from the mine and their homes at a great inconvenience (Dladla at 117).

#### Social Distrust

It is a rule in situations such as this that those victimized by the situation come to distrust all of the key actors---the corporation that has destroyed the

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<sup>2</sup> Children also can gain access to the mining property, also at great peril.

long standing way of life and the local environment and the state and local officials who allowed them to do it. Often the distrust has its roots in what I call the Eco-Historical context.

In his IAIA presentation, Sabelo Dladla put the current mining expansion into historical context. He explained that more than a decade earlier, Somkhele mine made promises to the traditional council about its intended operations of the open cast anthracite mine. The traditional council believed them and issued consent without involving the community members. As a result, the community was blindsided by the mine. But then some people became excited by the promised opportunities. But the mine acted to divide the community. They met separately with the most affected residents, those whose land would be taken and who would have to relocate. The most affected group was offered compensation, either in the form of a cash payment or a new house. Neither proved acceptable in the end because payments were too low to cover costs and the new homes were poorly built. Meanwhile major concerns were not addressed for the larger community regarding the availability of ploughing fields and grazing land (Dladla, 2018).

Another issue was mentioned earlier. Caring for the graves of their ancestors is important to Mpukunyoni residents. The Tendele Mine violated this sacred value when it fenced off and expropriated land containing graves. As a result, as Dladla discusses in his affidavit, cemeteries became inaccessible. There were no tombstones and the graves were only marked with tape. Coming onto the fenced property to visit the ancestors was made dangerous by the operation of heavy equipment. While the mines provided an opportunity to negotiate grave relocation, notices for the process were posted inside the fences and thus also rendered inaccessible. Some graves were damaged. A picture of graves within the fenced off area is included with his testimony (Dladla at 88,100c)

Berry has an even more disturbing account of the mistreatment of graves from when she assisted the Mpukunyoni community efforts to protect them. "When the Tendele mining started, the area had many graves at the site of the mine. These graves were exhumed and moved to another graveyard. This is a shocking place that shows a lack of regard for the dead and for the Zulu people's deep respect for their ancestors." She goes on to describe the site of the relocation as a slope where graves are being washed away leaving parts of

bodies exposed. She further explains that graves are now unmarked, with the tombstones piled in an unused toilet block. "No attention has been taken to match the gravestones with the graves when they were moved...This has caused great unhappiness with the communities. Many of them cannot determine where their ancestors are buried" (Global Environmental Trust Berry at 12-13).

For the Mpukunyoni community, the exhumation and relocation of ancestors' graves was an "exhausting" issue, contrary to culture and belief. Dladla explains that, nevertheless, an agreement was reached with the mine over how the costs of proper reburial would be covered. Community members would be paid one cow and one goat for every relocated ancestor. Later, this was replaced by a flat cash payment that fell short of covering costs. The mine met with the council to develop a protocol for exhumations, but the community was not consulted. They appear to have been left out of all important decisions regarding the mine" (Dladla 2018).

The backroom deal on the cemeteries was challenged by Dladla's father, a co-founder of the NGO Mining Environmental Justice Community Network in South Africa (MEJCON-SA). The elder Dladla had been excluded from meetings with Tendele because he did not have to relocate and thus was considered to not be directly affected. But he dismissed the idea that only those forced to relocate were impacted. He met with villagers, recording their complaints in writing for submission to Somkhele mine. His actions angered the Traditional Council. As a result, in 2011, the acting chief charged him with organising an illegal gathering and summoned him to appear before the local Msane Magistrate court, where the charges were dropped. However, the incident garnered him support from the Global Environmental Trust (GET). While the mine tried to buy him off with job offers, he continued his grassroots work. He discovered that Tendele had received no water permits and conducted no environmental impact studies. When the elder Dladla prepared and submitted to Tendele a list of people who lost land or otherwise suffered because of the mine, there was no response (Dladla at 119). Meanwhile, his life was repeatedly threatened, a stress that may have contributed to his natural death. After his father died, Sabelo stepped into his shoes. But the local headman blocked his effort to organize a meeting and the mine refused to take him seriously (Dladla, 2018). "I know the mine is not interested in anything I have

to say" (Dladla at 118). Lacking another way forward, he retained Ms. Youens (Dladla, 2018).

Based on her review, Youens (2018) drew a number of conclusions. She confirmed that the Tendele mine has operated despite not having required environmental authorizations, municipal planning approval or community and stakeholder consultation. Toxic waste has been stockpiled without waste permits. Required environmental assessments were sidestepped. Surface rights lease agreements with landowners and tenants were largely not reached. Community property was appropriated for the mine's benefit. In 2016, a further mining right was issued for 222 km<sup>2</sup> without community consultation and in spite of the application being for only 32km<sup>2</sup>. And the limited communication efforts by the company show disrespect for the community.

Of even greater concern, Youens reports additional threats and even murder of community members, presumably because of their opposition to the mines. I know from my own experience that community conflicts can escalate to this level. Activists who confront powerful corporations proceed at great risk. From the standpoint of lifestrain, lifestyle and lifescape, a life under active threat is a stressful existence where nothing is normal, routine is not allowed and vulnerable places and activities must be avoided. There is incredible pressure to submit to demands to be silenced.

Tendele denies that it has caused environmental harm and acted improperly. In a letter I saw, they blamed drought for water shortages and claimed that responsibility for water supply was up to the local municipality (undated letter, Gcabasche to Dladla). Moreover, the company claims that any damage done is more than offset by the economic value of the products it produces. I am not sure such calculations still work in light of climate change, even with the addition of community benefits. And I doubt that they offset Psycho-Social costs and other health impacts.

It is interesting to read a memo from the mining company provided in the Youens (2018) presentation entitled "Management Brief" and signed J. Steyn, COO. The memo cites community benefit programs including school repairs and training programs as well as a program of educating children about the benefits of the mines. It also cites as negative consequences due to delays in

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mine expansion a reduced number of truck trips, employees put on leave and orders unfilled. The brief implies that worker bonuses will not continue because of the resistance to mine expansion and that union workers will be down-scaled and retrenched. The memo concludes "it will be a truly tragic situation if hardworking employees (some 1400 in total between us and our service providers) are prevented from continuing with their employment because of a few community members who choose to stand in the way of future development and huge economic and social investment and upliftment in the community."

In my work, I have seen many such efforts to create community conflict by blaming opponents for stalling what is termed as progress. Presumably some threats and perhaps crimes directed against opponents derive from such "blame frames" that place local residents in the bind of choosing between opposing environmental harm to their families and facing social retaliation against them if they raise their voices. Such situations amount to coercion.

At a minimum, a failure of fiduciary responsibility occurred where the state and local administrations failed to protect the health, livelihood and land rights of citizens proximate to Tendele Mine.

The analysis of the questionnaires further confirms the reduction of social trust. Respondents no longer trust their institutions. And they universally distrust the coal mine to whom they have fruitlessly addressed their complaints, mostly receiving no answer other than a few promises that they say were never kept. They reported that there were many times that Tendele promised them to inspect the cracks on the walls of their houses only to never show up. The person in charge of replying to their queries was said to have vanished (Q: Phathiziwe Celer). There was only one report of a kept promise by the coal mine, when an employee came to measure the level of blasting (Q: Bangeni Mchunu). The land was dispossessed without people's consent (Q: Gabiside Ngubane).

Responsibility for addressing the inadequate water supply was bounced back and forth between the coal mine and the municipalities, leaving people confused about who was supposed to solve the water supply problems. Such uncertainty only increased their feelings of helplessness, because they were unable to resolve their problems.

It was interesting to observe a respondent's experience of having the coal company deflect their responsibility for addressing blasting damage by blaming the house cracks on "bad" building of the house" (Q: MJS Msweli). As if conventional houses in this region were intended to withstand the vibration from constant blasting!

It is evident that there is a compromised and distrustful relationship between community, coal mine, and institutions. As found in other contaminated communities, this relationship is itself traumatic and disabling, reinforcing people's anxiety, fear and helplessness.

### Lifestyle Impacts

Contaminating conditions often force adaptations to everyday life. Such adaptations can themselves have adverse impacts. At the least they are viewed as a nuisance and a reminder of the reason for the change. Sometimes they become a problem in their own right.

The Tendele Mine has disrupted the normal lives of residents of Mpukunyoni in numerous ways. Let's review a few. Dladla notes that massive blasting noise occurs twice weekly, sometimes with a half hour alarm but, often without warning. The resulting vibration causes windows to rattle and whole houses to shake. (Dladla at 101, 114). He recalled that blasting was even more frequent in 2010 when mining was very close to Dladla's community. The walls of his house developed cracks, as did the door frames. Some of his neighbors' homes collapsed or lost walls. (Dladla at 115). Given the potential for such collapse, people may have learned to go outside after warning signals or to take other precaution. But the blasting impact was not the only challenge to everyday life.

One of the major social crises in Africa is the dependence on firewood that must be collected, often at great distances from the home. Dladla notes that fencing off the mine property resulted in the loss of the bush where his community collected wood and some was subsequently destroyed by mining. As a result, the community is forced to buy wood for big ceremonies because there is no longer enough available (Dladla at 116).

Distrust of drinking water is a common outcome of contamination. Water is a basic necessity and viewed as a basic right. Dladla described in detail what happened to his family's water as the result of the activities of Tendele Mine. Traditionally, the family captured rainwater and stored it in drums. But after the mine began operations, this water became contaminated with coal dust and was no longer potable. Residents were forced to travel to the taps that draw water from the Mfolozi River. But this accommodation was not long lasting. Because the river runs dry seasonally, residents were then forced to draw water from the Mbukwini dam, whose source, and thus waters, they knew to be polluted from mine wash down areas. But even this further adaptation was short lived. In 2016, both river and dam went dry, forcing residents to go without water for "many months." In the midst of this dire drought, the mine sunk wells to keep their own operations going. The wells drew remaining water in the river toward the mine pump. "We had nothing," Dladla explained (Dladla 112-113).

The analysis of the questionnaires suggests other ways that lifestyle has been impacted. The responses indicate the extent to which members of the Mpukunyoni community are deeply grounded in the land occupied by their great, great grandparents and they have lived lives based on nature very close to the practices of their ancestors. Their lifestyle was thus cemented by time and place, very vulnerable to environmental degradation and change.

Respondents described their baseline lifestyle. Their livelihood was agricultural. They grew many different types of crops (mealies, sugar cane, amadumbe, beans, spinach, sweet potatoes, carrots, beetroot, cabbage, onions) and fruits (banana, guava, lemon, orange and peach). Now they can grow little because the "Coal mine took my land." They had lost the majority of their fields, as much as 11 hectares (Q: Zama Mbonambi).

Before the coal mine, inhabitants were self-sufficient, growing enough surplus to sell to their neighbors and donate to the poor and orphans. Now they cannot even grow enough to feed their large families (6 or 7 people). A secondary result is that people have become more isolated. Social relationships based on economic exchange and solidarity with the poor and needy have atrophied.

Their sense of community and social cohesion has also diminished with their new poverty and, in some cases, as a secondary result of relocation into another

area. Relocation means a huge change of neighbor networks, affecting social identity, emotional stability and self-identity. One respondent explained that he stopped marketing crops because of the scattering of the community, "*I'm not be able to sell because there are not neighbors anymore*" (Q: S.S.Mkhwanazi).

Even those able to retain most of their land found themselves unable to produce crops and fruits as before because of the pollution. The land is not fertile anymore. One explained, "*There is dust on the top of the plants*" (Q: Thusile Khumalo). But water supply is also mentioned as a major problem. Often there is polluted water to irrigate the fields or there is no water at all. The shortage of water is not only blamed on drought, but also on the coal mine drawing down wells that formerly supplied the community with water (Q: Thabisile Ngobese). Before the coal mine, residents recalled having to walk long distances for water, but it was free. A respondent noted that "*It was about 10 years ago that water stopped to be pumped by the river*" (Q: Lawrence Mthyane). Now residents can draw drinking water from a tap on the water tanks for a fee. Water taken from the dam is used to irrigate the fields and water the livestock. One respondent rated the quality of this water source. "*This water is full of topsoil, coal, polluted for us and the chickens who drink it*" (Q: Sthembuso Maxase, Samuel Mgubane).

Many respondents denounced the shortage of water. It is a major source of frustration. They are restricted as to where they can take water (Q: Nomathemba Ndlovu). They now have to pay, and the supply is not efficient. Drought is mentioned as a problem occurring particularly after their relocation (Q: Smiphiwe Mkhize).

Respondents are farmers accustomed to keeping cattle, goats, chicken, sheep, and some donkeys on their grazing land. Now, if they don't have grazing land, they cannot farm livestock. They have been forced to give up their work as farmers. With the destruction of the landscape outside the park, they also have to forgo hunting. And cut off from growing and foraging and hunting, they no longer have items for barter and trade.

Their prior field and forest holdings also allowed them to forage for traditional herbs, such as aloe, iboza, hlunguhtlungu, nsukumbili, umsuzwane, msuzware, xaphosi, ikehambilenyongo, guava and mthunduluka. These are used for medicinal purposes, such as treating the flue, infections, breathing problems and also for the health of the livestock. Now many report losing this practice.

Grazing land is in short supply and they think it is now more difficult to collect traditional herbs from the forest. One respondent even suspected that the coal mine collected all their traditional herbs, much as they have taken everything else: the land, houses, livestock, graves and people's health (Q: MJS Msweli).

In sum, Dladla notes that the "quality of life has been changed forever" by the mine activities which Tendele plans to continue without cessation (Dladla at 102-103). That would deny any respite to residents who have had to integrate the site, sound, taste and sensation of the mine into their daily lives for more than a decade.

### Lifestrain Impacts

All of these other impacts affect the emotional status of the affected individuals. Even if they are calm and competent people by nature, they are now under constant and multiple sources of stress and strain. Such pressures cannot help but complicate efforts to cope and adapt and to experience what quality of life one still enjoys.

The Tendele mine has been a source of extreme and deleterious stress for residents of nearby communities. Dladla says that he 'hates living next to the mine. It is noisy and there is dust everywhere all the time. My cattle now have to graze far away.' (Global Trust Dladla at 117).

These strains are evident in the questionnaire responses. Among the evident lifestrain impacts are fear, above all for children; the stigma of being passive victims, disablement and feelings of being violated by the coal mine.

There is a strong current of sensed injustice and wrong and feelings of unnecessary and unfair loss evident in the repetitive complaints that are common to all the questionnaire narratives. The belief that one has been exposed to toxic contaminants is a stressor that in turn causes such psychological impacts as generalized anxiety, psychosomatic symptoms, depression and helplessness.

Zama's story is very relevant for showing lifestrain impact. It was reported that the entire family suffered anxiety problems since 2007. They were affected by environmental annoyances, such as noise from the coal mine blasting and the sight of dust everywhere. They were worried for the shortage of water. They

were forbidden to walk through the landscape as they had before, in a place that they now did not recognize anymore, a place with a changed identity. Zama believed that their stress symptoms were caused by the coal mine. Her father-in-law died from asthma and her mother-in-law hung herself (Q: Zama Mbonambi). Respondents see illness around them and make connections to their changed environment. For example, farmers explained the link between the death of livestock and the coal mine pollution. And they then drew conclusions about their own fate, as one respondent explained. *"I'm scared because what I have seen in my livestock has been caused by the mine"* (Q: Hengwatinkosi Khanyile).

A further lifestrain impact is related to place attachment and its connection to ones' ancestors. Most respondents are from this land, occupied by their great, great grandparents. They have a very strong place attachment; some even refused relocation (Q: Tholekela Dladla). The burial of their ancestors in the landscape is a major part of this attachment. Visiting and caring for graves is an important component of normal activity. The coal mine not only relocated some residents, but also many graves, as noted. The graves were exhumed and reburied.

The respondents frequently expressed worry about the fencing of the graves, their difficulty to easily access the new area, and the difficulty they now had identifying their own family graves, which were not clearly marked (Q: Ayanda Ngqulungu). They were worried that the relocated graves were not adequately protected from people (Q: S.S. Mkhwanazi) or from the blasting and mining activities. In one interview, such worries were repeated again and again as if a prayer. The cultural importance of this connection to ancestors was clearly crucial to their sense of balance. It is related to the stories they tell to bind people together and connect the past to the future. Threatened, as it is, their identity is thrown into turmoil (Q: Bongeni G. Gumedi). The graves are an essential element in this story telling, it roots them to the ground and cements their place attachment. The relocation, inaccessibility, mixing and desecration of these sacred connections is deeply harmful to their psychological wellbeing.

### Environmental Stigma

The Tendele Mine has degraded the value of place and property and thus of the people occupying, owning or associated with affected places. A formerly

beautiful landscape has been converted into an unstable moonscape, a place devoid of life or sustenance. There is effectively no prospect of reclamation and restoration, let along abatement of hazards.

Of particular note is the historic Hluhluwe-iMfolozi Game Reserve, which dates back to the Zulu Empire. Hluhluwe-iMfolozi is a marker of the Zulu's prominent history and stewardship of the land. The Mfolozi community occupied the boundary of the park and it has been part of their legacy as Zulu people as well as a magnificent part of their community landscape. Now that boundary has been usurped by the mine, which threatens the integrity of the community and the park. Environmental stigma is a key impact of contaminated environments. In this instance, the positive identity that accrued to the Mfolozi community through their close association with the park has been replaced by their connection to the environmental devastation, contamination and blight associated with the mine. It is a shift of identity of which they are completely aware. But it is also a shift in how they are seen by others from the outside. The mine stigmatizes them as occupants of a degraded and disgraced place, unable to protect the border of the keystone of modern conservation, a true legacy of a Zulu past.

In my own visit to the park, other elements of its importance were evident. It is a source of direct and secondary employment and tourism to the local region. I personally interacted with the craftspeople selling wares at the park; it was evident that there were many artists who were earning or complementing a livelihood as well as perpetuating cultural craft making and imagery. This pride was evident when the waiters and kitchen staff in the park restaurant broke into traditional Zulu dance in the restaurant in the evening. This stomping dance is one of pride and power, not the submission the mine has forced on the community. In addition, in speaking with the game wardens that accompanied our safari, it was evident that the park is a matter of pride and connection to the fauna present during the local people's historic journey on earth. Everywhere in Africa an epic battle rages with poachers who butcher elephant and rhino for horn, a battle for which these game wardens are prepared to risk their lives. At a larger scale, one sees the health of the whole of Hluhluwe-Imfolozi Park itself threatened as it is ringed by coal mines, as is the smaller Thula-Thula Park I visited. In a sense, this is poaching at a Meta scale.

## Economic Damages

Regarding economic loss, all the respondents reported physical damages to their goods, cracks and collapsed walls in the houses, loss of land and cattle. In some cases, they lost more than 200 hundred head of livestock, nearly their entire herd. It is useful to cite other economic losses that they reported: R5,800 for livestock (Q: Zwane Ndegezi), R10,000 for crops (Q: Volephi Mathonsi), and a total monetary loss of between R400,000 and R600,000 (Q: Tobias Neonana). They mention other economic considerations, as well. The collapsed walls and cracks of the houses, their need to buy food because they can no longer live a subsistence lifestyle, the cost of as much as R5,000 for water supply. Respondents explained that their economic loss is much greater than the amounts of compensation some have been paid, apparently a maximum of R370.000.00 for relocation, an amount they said proved inadequate. Beyond these costs, they cited the need for compensation for loss of the land, livestock, and the damage to their dwellings, their health problems and more (Q: Smiphiwe Mkhize). A few also indicated they received payments for grave relocation.

## Community Conflict

Industrial projects of this type bring massive dislocation, degradation and contamination. But they also create jobs and some community members benefit greatly. Thus, it is common to have affected communities riven by conflict that follows the tradeoffs involved in the project.

The questionnaires shed some light on this conflict. There is an evident community divide between the majority, who suffer the effects of contamination and want the coal mine to be closed and a minority concerned with employment, youth, the economy and other legitimate local benefits of the mine. The MCMF represents this latter perspective. I note that MCMF has filed an Amicus Brief in this matter which expounds on these concerns. While respecting the importance of such values as assuring employment of the burgeoning youth sector, these concerns do not erase the adverse Psycho-Social Impacts discussed in this report.



The topic of compensation is itself another potentially divisive issue because some residents received payments denied to others. A common problem in such situations, the matter of fairness of compensation becomes a potential dividing line and source of conflict between neighbors. In this instance, since most compensation was for relocation, there is additionally the question of how it was decided who would move and who would stay. While relocation was a major adverse impact, if it means living further from the contamination and blight, then there is a definite silver lining. Meanwhile, those who were left in place lack neither compensation nor separation from the mine site, with all of its negative impacts. There is a clear inequity.

In any case, the presence of threats and retributive crime suggests that some aspects of the community conflict are hardly benign. It is not clear whether these violent components arise from the original community, however, or from other actors in the situation. Or perhaps they are some combination of the two.

### Environmental Injustice

In my work, I frequently confront issues of environmental injustice, where the powerful take advantage of the powerless. Key elements of the Tentele Mine story fit the profile of Environmental Injustice. The mine occurred without public knowledge or warning. Before they knew it, people had been displaced and were being moved or they were cut off from their grazing and farm lands and their ancestors' graves. There was no public hearings or process, no information, no opportunity to object or review or bring evidence. The victimized community was immediately impoverished by the loss of farms and shops. When leaders arose from the community, they were ignored. Intimidation and violence has been used to silence opponents. They were deprived not only of food self-sufficiency, but also of water and firewood. The community was fundamentally disabled. In many parts of the world, government officials have become sensitive to such situations because of the inherent injustice and inappropriateness. The residents of Mpukunyoni community deserve such consideration.

## Cumulative Impact

In professional practice, it is necessary to consider the cumulative effects of multiple interacting projects or conditions. In this instance, considering only coal mining, there is a concentration of existing and proposed mines in an area that is dedicated to nature protection (see Figure 2). All of these projects are likely to adversely impact residents of the proximate region in addition to compromising the conservation value and environmental integrity of the area. In addition to Tendele Coal Mining (Pty) Ltd mine, Somkhele on the eastern border of the Hluhulwe-iMfolozi Park, the immediate region is also the site of the Zululand Anthracite Colliery on Hluhulwe-iMfolozi's Western border. Additionally, two mines are proposed in the same immediate area. One project would encompass the Fuleni Reserve on the southern border of Hluhulwe-iMfolozi. The Mpisi (Pty) Ltd mine would encompass the Thula preserve and nearby farms.<sup>3</sup> Many adverse Psycho-Social impacts associated with coal mining will be multiplied because of this concentration of coal mines.

In my work, I often confront situations where new projects follow the path laid out by prior projects. The rationale is often that the area is already devastated, so more will not cause much damage. In the Theory of Environmental Turbulence, I see this as an example of Environmental Stigma. Having ruined the environment, there is nothing more to lose. I refer to the resulting siting decisions as examples of the "perpetual jeopardy" that the land and community is placed under because they are already blemished. I have pondered such situations at great length and concluded that this is a false logic. It is wrong to accumulate more impacts in the area because of the further harm it will do to ecological and social integrity in an area where both the land and people are already severely stressed. If mining is to continue or expand in the area, then decision makers need to be prepared to relocate populations and truly make them whole. In this instance, that also means transparency, full engagement and attention to issues such as the respectful relocation of graves. Such relocation is easier to propose than to carry out well, however, so beware thinking that it is an easy fix. In the instance of Mfolozi community, if the people are remain in place, then the government and the mine need to take responsibility for restoring the environment to make it safe, aesthetic, capable of supporting vegetation and becoming

<sup>3</sup> Youens, Kirsten, May 28, 2018.

habitat, recreating arable and safe farm fields and grazing areas, securing potable water resources of sufficient supply, and creating a medical monitoring and generous health plan to take care of the affected population. A final issue faced by regulators is that if mining is to be allowed to ring Hluhluwe-iMfolozi Park, there needs to be a plan to replace the park if it loses its viability because of contaminated water sources and the like. Certainly its attraction to tourists will be impacted if on all sides one finds unsightly degraded landscapes. Of course, if finding a replacement for the park is not feasible, then there are clear implications for mining permit decisions.

### Conclusion

Based upon my extensive experience, I conclude that residents proximate to the Tendele Mine are subject to many of the adverse Psycho-Social Impacts described above. These impacts justify cessation of mining until proper review and permitting is done and awarding of compensation for past and existing adverse conditions caused by the mine. The negative consequences of continuing such exposures into the future must be weighed in any regulatory decisions about coal mine expansion or permit extension, particularly in light of the potential for cumulative impacts.

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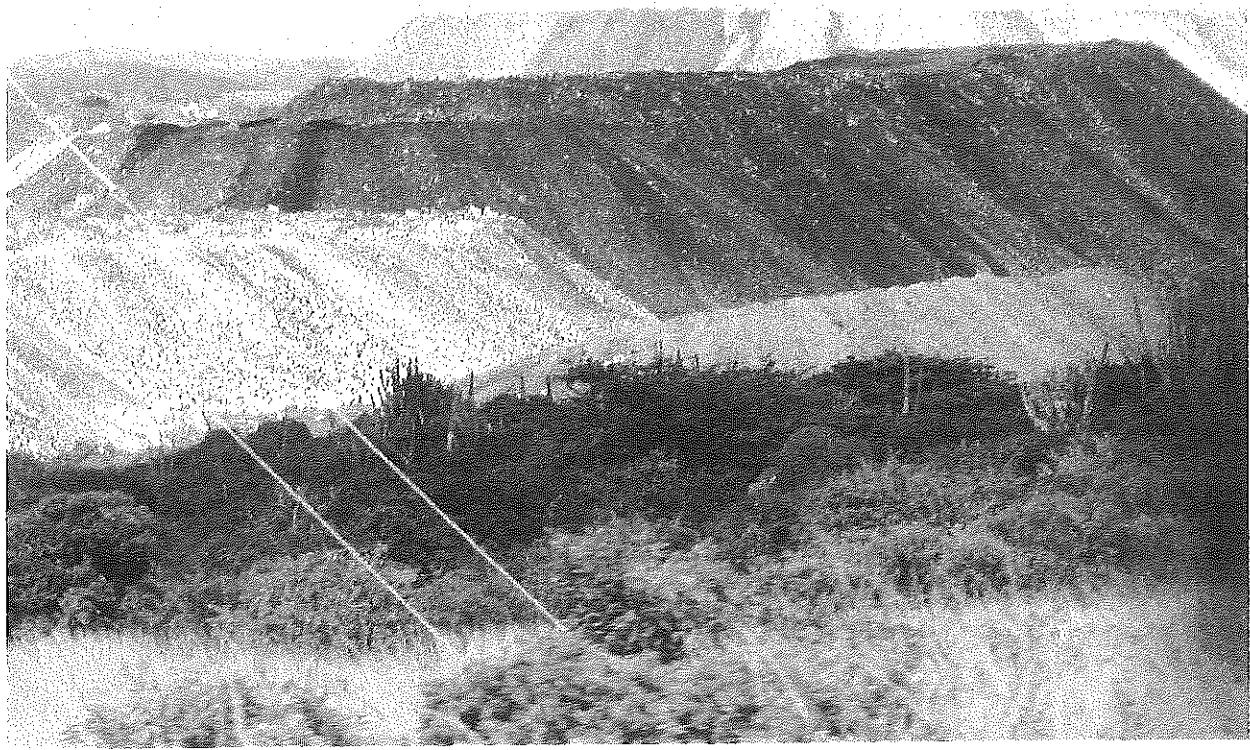


Figure 1: Houses visible by mining site (Photo: author, May 2018)

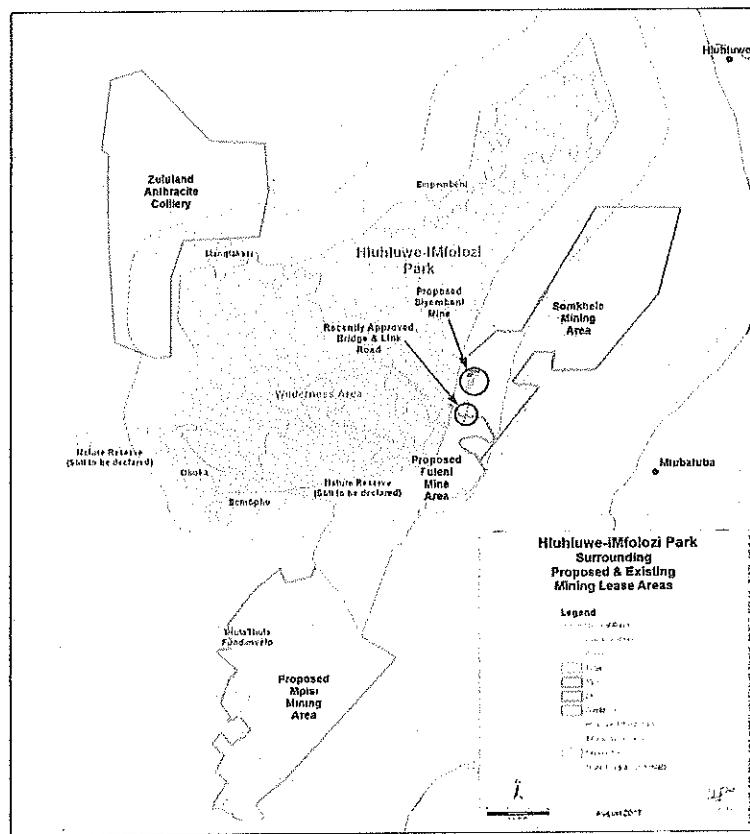


Figure 2: Cumulative Impacts of Existing and Proposed Coal Mines in the Vicinity of the Hluhluwe-iMfolozi Park (source: Youens, 2018)

2/28/2018

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Consultant on Sustainability and Ecoliteracy to Kappa Delta Pi international educational honors society, 2016-17.

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Invited participant of expert workshop on environmental victimization organized by the International Association of Impact Assessment for the World Bank, Vienna, June 27-30, 2016.



County of Hawaii. Prepared proposal for a Psycho-Social Impact Assessment of the impacts of geothermal energy development for Native Hawaiians, 2015 and 2017. Approved awaiting contracting.

Consultant and liaison on the Reed Next Generation Project to develop a sustainable context for supporting adults with autism, 2015 and continuing. Project development and funding as well as building a Ramapo College partnership.

Consultant and liaison for the Ramapo Mountain Guardian Project, involving a partnership between the Ramapough Indians, Ramapo College and various community groups to create an ongoing stewardship program for the Ramapo Mountain region. Grant writing and oversite of development and testing of model "Upstream/Downstream Curriculum." 2014 and continuing.

Consultant to Uzbekistan on various Aral Sea, environmental contamination and sustainability issues, 2012 and continuing.

Project Director, Trust for Mutual Understanding Grant to Institute for Environmental Studies, Ramapo College, "Exchanging the Lessons of the Aral Sea Disaster." 2011. Exchange of scholars addressing the ramifications of the Aral Sea disaster. Led team of Americans visiting Uzbekistan in May/June 2011, with visit from Uzbek team October 2011.

Fulbright Visiting Scholar Grant written for 2009-2010. Hosted Dr. Abror Gadaev of Samarkand Architectural and Engineering Institute.

Project Director, N.J. Board of Public Utilities Grant to Institute for Environmental Studies, Ramapo College, "Renewable Energy and Green Design." 2007-2008.

Project Director, Trust for Mutual Understanding Grant to Ramapo College, "Empowering Russian and American NGO's to Address Issues of Future Sustainability." 2002-2004. Exchange of scholars and activists addressing issues of contamination in Russia and the U.S. Led team of Americans visiting Russia in July/August 2002 and hosting visiting Russian team in November 2002. Senior editor for resulting volume.

Member of team assembled by University of Mississippi to develop guidelines for post-Katrina social science research. 2006.

Project Director and prepared report with Ali "Kate" Higgins, "*Inherit the Earth: The Sustainable Living Pioneers*. A Program for Greening Phase Seven and Ramapo College's Commitment Toward Sustainable Campus Housing, February 1, 2002." Funded by the Ramapo College Foundation.

Consulted to the Oversight Committee for the medical monitoring fund for the Lipari Landfill, winter 2002.

Agency for Toxic Substances and Disease Control/ Environmental Research Group. Prepared chapter for a volume on stress reduction approaches for use in training professionals to work in contaminated communities. 1999-2000.

Project Director, Trust for Mutual Understanding Grant to Ramapo College, "Informing Environmental Decision-making: Environmental Impact Assessment in Russia and the U.S." 1999-2000. Exchange of scholars and activists using environmental impact assessment; linking University courses to actual field environmental assessment projects. Visited Russia from December 1999 through February 2000 and hosted visiting Russian team in September/October 1999. Authored final project report, March 2001 and co-authored and edited project volume to be published in Russian and English in 2002.

Project Director, "New Jersey Higher Education Partnership for Sustainability." Project funded by the Geraldine Dodge Foundation, Spring 1999. Directed the organizational development phase of an on-going project.

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Fulbright Visiting Scholar Grant written for 1998-1999. Hosted Dr. Maria Tyschiachniouk, St. Petersburg, Russia.



Participated in sustainability exchange project funded by the Trust for Mutual Understanding which involved a study tour of western Russia and participation in conferences in Washington and St. Petersburg, summer 1998.

Crawford, Multari and Clark Associates. Consultant in the preparation of Socioeconomic Impact Assessment on the alternative remedial approaches to the Unocal oil spill in Avila Beach, California, 1997.

Fund for the Improvement of Post-Secondary Education (FIPSE). Project Director for Four-year long grant awarded to Ramapo College of New Jersey entitled "Ecological Literacy and the Undergraduate Curriculum." 1994-8.

Native Lands Institute. Assessment of the psycho-social impacts of the loss of water from Wak Village on the San Xavier Reservation of the Tahono O'odham People. Initial field study completed summer of 1994. Second field visit January 1996. Continuing project.

U.S. Department of Energy. Prepared report: "Mitigating Environmental Stigma and Loss of Trust in the Siting of Hazardous Facilities" for the Yucca Mountain Studies Series, 1991-2.

Church World Service. Prepared study guide to accompany video: Three Parables for the Technological Disaster Task Force. 1990.

Impact Assessment, Inc. Psychosocial Impact of the "Oiled" Communities. Research consultant to project studying 24 communities affected by the Exxon Valdez oil spill. 1989-1990.

New Jersey Department of Health. "Final Project Report: The New Jersey Ozone Notification Program Evaluation." Prepared on behalf of the Ramapo Institute for Environmental Studies. February 15, 1989.

Impact Assessment, Inc. Member of the Washington State Study of the SocioEconomic Impacts of the proposed high level nuclear waste repository in Hanford, Washington. Responsible for examination of historic effects on "downwinders." 1986-87.

Center for Social Impact Assessment. Member and project team leader of the Mississippi State Study of the SocioEconomic Impacts of the proposed high level nuclear waste repository, Richton Dome, Mississippi. 1984-86. Wrote Implementation Plan, Preliminary and Final Plans of Study for the Psychosocial Impact project as well as two reports: "Modeling Mississippi" and "PsychoSocial Impacts on the Community."

Buffalo Organization for Social and Technological Innovations, Inc., 1972-3. Psychological Consultant. Reports include "Constructo-Tubes: Preliminary Concepts, Components and Curriculum Units," "Some Preliminary Thoughts on Evaluating Constructo-Tubes," "An Evaluation Design for OIS (Office Interior System)," "Hauserman Office Interior System: Recommended Evaluation Program," "Outline of Hauserman's On-Site OIS Evaluation Program," "A Look at Five Different Decision Rules" and "Discussion Leader's Handbook" (co-authored for PAK---Planning Aid Kit produced for NIMH).

### Toxic Tort Projects

Phillips and Paolicelli, LLP, Attorneys at Law. Retained to develop evidence pertinent to new litigation involving the Love Canal neighborhood in Niagara Falls, NY. 2014 and continuing.

Eric Jantz, Esq. New Mexico Environmental Law Clinic. Retained on behalf of MASE Alliance.org (Multi-Cultural Alliance for a Safe Environment) to prepare comments on the adequacy of the Draft Environmental Impact Statement prepared by the U.S. Forest Service for the proposed Roca Honda Uranium Mine in addressing psycho-social impacts for native and non-native stakeholders. Declaration filed June 11, 2013.

Richard Webster, Esq. Public Justice, appearing on behalf of Hudson River Sloop Clearwater. Prepared expert report "The Environmental Justice Implications Associated with the Re-permitting of the Indian Point Nuclear

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Power Complex, Buchanan, NY," September 1, 2011, offered as testimony before the Atomic Safety and Licensing Board hearing over the re-permitting of the Indian Point Nuclear Complex. "Rebuttal to Respondents' Testimony on the Re Environmental Justice Contention," June 27, 2012. Provided testimony before ASALB on October 23, 2012.

Joel Kupferman, Esq. New York Environmental Law and Justice Project. Presented affidavit for *St. Nicholas Houses vs. The City of New York, NYCHA, et al.* on the Psychosocial and Environmental Justice Impacts from the loss of forest and gathering and recreational facilities and the addition of a school building, a through-street and a residential tower to the St. Nicholas Project, Harlem. July 2011.

Jennifer Klimek, esq. and Ackroyd LLP. Expert on behalf of various citizens in permit hearing for Shell Waterton 68 gas well and facilities. Retained to assess the psycho-social impacts of prior gas well and pipeline development in the Beaver Mines, Alberta area and report on the potential impacts of their expansion proposed by Shell through this project. Submitted report "Anticipated Psycho-Social Impacts To Proximate Residents and Recreationalists from the Shell Waterton 68 Project" and testified at hearing before Alberta Energy Resource Conservation Board in October 2010.

Ackroyd LLP. Citizens for Responsible Development, intervention into permit hearing for the TOTAL Tar Sands Upgrader. Retained as expert to evaluate the proposed Emergency Response Plan and prepared report "Habits of the Heartland: Home/Farmland vs. Industrial Zone: An Evaluation of the Emergency Response Plan for the Proposed TOTAL Upgrader," Report to the Alberta Energy Resources Conservation Board. May 10, 2010 (112 pages). Testified at hearing in Fort Saskatchewan, Alberta June 8-10, 2010.

Skinner Law Firm. Joy v. Richmond American Homes of W. Va. Retained to prepare testimony in case where residents were exposed to geologic radon gas in homes outfitted with radon removal systems, 2009-2011. Settled.

McRoberts, Roberts & Rainer. John D. Gale vs. New England Gas Company. Consulted on case in Tiverton, R.I. involving residential exposure to Coal Gasification Wastes, 2006-7. Settled.

Tousley Brain Stephens PLLC. Albano v. Scott Real Estate Investments, Inc. Preparation of testimony and report regarding residents of an apartment complex contaminated with asbestos during remodeling. 2005-6. Deposed, May 2006. Case settled before trial.

Scott Thornton, Esq. and Michael Sussman, Esq. Preparation of testimony for Leland et al v. Moran et al. Prepared report "Psycho-social Impacts Associated with the Ellenville Scrap Yard: Stress and Health Threat and Loss of Enjoyment of Home and Property along the Beekill," August 2001.

Murray & Murray. Retained as an expert in order to prepare testimony for the case Bettis v. Reutgers-Nease involving the contamination in eastern Ohio of the Middle Fork of Little Beaver Creek and its floodplain with chemicals including Mirex and subsequent ecosystem, wildlife and human exposure issues. Prepared report entitled "Psychosocial Impacts Associated with the Contamination of the Middle Fork of Little Beaver Creek, January 7, 1999." Deposed. Case settled.

Shabel and Shabel. "Preliminary Report: Psycho-Social Impacts Associated with Tullytown Landfill for New Jersey Residents in the Florence Township Area." April 19, 1998.

Riddell, Williams, Bullitt & Walkinshaw. Branin V. Asarco. Conducted extensive field study of the psycho-social impacts resulting from contamination due to the Asarco smelter, Ruston and N. Tacoma, Washington. 1994-5. Deposed. Case settled.

Riddell, Williams, Bullitt & Walkinshaw. Sunshine Properties et al v. Port of Bremerton et al. Conducted initial review of issues relating to impacts of historic and current dumping on community conflict in a trailer park. Case settled.

Melat, Pressman, Ezell & Higbie, LLP. Dodge v. Cotter. Field reconnaissance study conducted in Canyon City, Colorado. 1994.

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Lambert and Nelson. Beach v. UNISYS. Conducted study and prepared report "The Social and Psychological Impacts Resulting from the Earhart Superfund Site, Bristol, Tennessee." Deposed, 1992. Case settled.

Riddell, Williams, Bullitt & Walkinshaw. Prepared expert testimony regarding Overlook Rim V. City of Tacoma, 1991. Deposed and testified at trial.

Milberg, Weis, Bershad, Specthrie & Lerach. Consultant regarding Penny Newman, et al v. J.B. Stringfellow, Jr. et al., 1991.

Garrod Associates. Prepared affidavit in support of the petition by Pickering/Ajax Citizens Together for the Environment for judicial review of social and community impacts of the proposed Toronto P-1 landfill site. 1990.

Short, Cressman and Burgess. Abelman, et al vs. City of Seattle. Retained to prepare testimony regarding psycho-social impacts of Kent Midway Landfill, Deposed. 1990. Case settled.

McLain, Lee, Esq. Mary Green, et al vs. Marathon Petroleum, et al. Prepared testimony regarding the psycho-social impacts resulting from the Texas City hydraflouric acid spill of 1987. Deposed. Testified at trial, Galveston, Texas, November 1990.

Baumeister & Samuels. Lewis vs. General Electric Co. et al. Prepared report entitled "Psychosocial Impacts on the Lewis Family from the Caputo Landfill." 1989. Case settled.

Niewald, Waldeck, Norris and Brown. Slaughter et al. vs. Farm & Home Savings Association et. al. Preparation of testimony on the psychosocial impacts upon adjacent residents to the BRIO/DOP Superfund Sites, Houston, Texas. Deposed. 1988-89.

Milbank, Tweed, Hadley & McCloy. Application of CECOS International for the sixth expansion of the Secure Chemical Residue Facility, Niagara Falls, N.Y. before the New York State Department of Environmental Conservation. Prepared prefilled testimony entitled "The Psychosocial Impacts of the Proposed SCRF #6 of the CECOS Hazardous Waste Disposal facility." Testified at administrative hearing as witness for "The Concerned Citizens Organizations." 1988.

Bricklin and Gendler. Ammons et. al. vs. Great Lakes Chemical. Investigated impacts on residents of Birdsview, Washington resulting from EDB contamination of the groundwater. Deposed. Testified before the Washington State Supreme Court, Mt. Vernon, Washington. Oct. 1987.

Hogan, Smith and Allspaugh. Floyd Wilhoit et al vs. Olin Corporation and Tennessee Valley Authority. Deposed regarding psychological impacts of DDT exposure in Tiana, Alabama area. 1985-86. Case settled.

Martin and Snyder. Cito vs. Monsanto. Prepared report entitled "Stigmatizing Aspects of Toxic Pollution" for trial involving the effects on a dairy and milk processing business of PCB contamination. Deposed. 1984.

Gordon and Gordon. Quaglia vs. Barrier Chemical et. al. Prepared report entitled "Family Disintegration in the Aftermath of toxic Exposure" describing effects of industrial pollution on lives of an adjacent family. Deposed. 1983. Case settled.

Gordon and Gordon. Kordus vs. J.I.S. Industrial Services et. al. Prepared report entitled "The Loss of Livelihood through Toxic Exposure" describing the effects of an industrial landfill upon an adjacent nursery/homestead. Deposed. 1983.

Bailey and Broder. Prepared report "Stress and TMI." Fall 1983.

Kreindler and Kreindler. "Ayers v. Jackson Twp." Prepared report entitled "The Social and Psychological Impacts of Groundwater Contamination in the Legler Section of Jackson, New Jersey." Deposed. 1981-82.

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Town of Goshen, N.Y. Administrative hearings on the application for expansion of Al Turi Landfill, Inc. before the New York State Department of Environmental Conservation. Prepared report entitled "The Social Impacts of Al Turi Landfill, Inc." Testified at administrative hearing, 1980.



## PUBLICATIONS

### Books:

Edelstein, Michael R, Astrid Cerny and Abror Gadaev. *Disaster by Design: The Aral Sea and Its Lessons for Sustainability*. Vol. 20 of *Research in Social Problems and Public Policy*. London: Emerald, 2012.

Edelstein, Michael R., Maria Tysiachniouk, Ph.D. and Lyudmila V. Smirnova, Ph.D. (Eds.) *Cultures of Contamination: Legacies of Pollution in Russia and the U.S.* Vol. 14 of *Research in Social Problems and Public Policy*, New York, NY: Elsevier, 2007.

Edelstein, Michael R. *Contaminated Communities: Coping with Residential Toxic Exposure (Second Edition)*. Boulder, Co.: Westview Press/Perseus Books, 2004.

Jonathan Reisman, Polina Agakhanians, Maria Tysiachniouk and Michael R. Edelstein (Eds.), *Public Participation in Environmental Impact Assessment in Russia and United States*. Publishing Group of the Research Institute of Chemistry of St. Petersburg State University, 2002.

Edelstein, Michael R. and William Makofske. *Radon's Deadly Daughters: Science, Environmental Policy and the Politics of Risk*. Lanham, Md.: Rowman and Littlefield, 1998.

Edelstein, Michael R. *Contaminated Communities: The Social and Psychological Impacts of Residential Toxic Exposure*. Boulder, Co.: Westview Press, 1988. Paperback edition issued in 1989.

William Makofske and Michael R. Edelstein (eds.), *Radon in the Environment*, Parkridge, N.J.: Noyes Science Publications, 1988.

William Makofske and Michael R. Edelstein (eds.), *Radon in the Environment*, Ramapo Institute for Environmental Studies, 1987.

### MOOCs, Webinars and Video:

MYCM Internal Capacity Building MOOC, organized and ran nine hour MOOC for the Moroccan Youth Climate Movement and the MENA (Middle East North Africa) Youth Climate Movement under the auspices of the Ramapo College Center for Sustainability, February 15, 21, 22, 2018.

International Association of Impact Assessment Webinar, "Understanding Environmental Impacts on Vulnerable Populations through Psycho-Social Impact Assessment," July 19, 2017. 1 ½ hours. <https://youtu.be/yNAdfn2yWi4>, Extended Q/A, 2.5 hours, <http://www.iaia.org/webinars.php>.

Directed and Produced the "Healthy and Sustainable Living MOOC," September 6, 2015 (HSLM14) <http://www.wiziq.com/online-class/2063646-hslmooc14-making-the-sustainable-transition>. Included keynote presentation 'Making the Sustainable Transition.'

"The Ecological Literacy Project, Ramapo College of New Jersey." Executive Producer for 20 minute video summary of the four-year project funded by the Fund for Improvement of Post Secondary Education. Produced and Directed by Jennie Bourne.

"A Time of Challenge." 1996. 1 hr., 45 min. Video edited from 52 hours of tape providing a summary of the content of the First Mid-Atlantic Environmental Conference. Focus is on the challenge to the environmental paradigm mounted by the 104th Congress.

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**Articles and Chapters in Print:**

Edelstein, Michael R. "Bioregional Thinking as a Guide to Building a Sustainable Future for Central Asia," In Shinichiro Kyozawa and Ulugbeck Khasnov, *State Politics and Governance: Contemporary Development Concepts on Economics, Innovations and Environment*. University of World Economics and Diplomacy, Tashkent, Uzbekistan, 2018, 31-39.

Edelstein, Michael R. "Psycho-Social and Environmental Justice Impact Assessment: Better Understanding Impacts on Vulnerable Populations." *Proceedings of the International Association of Impact Assessment*, 2016.

Hoover, Elizabeth; Renauld Mia; Edelstein Michael R. and Brown, Phil. "Social Science Collaboration with Environmental Health" *Environmental Health Perspectives*, 123: 1100-1106. November 2015. <http://dx.doi.org/10.1289/ehp.1409283>.

Edelstein, Michael R. "When Recreancy Becomes the Norm: Emergency Response Planning and the Case of Tar Sands Upgrading in the Alberta Industrial Heartland," pp. 119-175, in Susan Maret, (Ed.), *William R. Freudenburg, A Life in Social Research in Research in Social Problems and Public Policy*, Volume 21. London: Emerald Group, 2014.

Edelstein, Michael R. "Death And Rebirth Island: Secrets in the U.S.S.R.'S Culture of Contamination," pp. 39-54 in Michael R. Edelstein, Astrid Cerny and Abror Gadaev (Eds.). *Disaster by Design: The Aral Sea and Its Lessons for Sustainability*. Vol. 20 of *Research in Social Problems and Public Policy*, London: Emerald Group, 2012.

Edelstein, Michael R. Disaster By Design: The Multiple Caused Catastrophes of the Aral Sea," pp. 107-157 in Michael R. Edelstein, Astrid Cerny and Abror Gadaev (Eds.). *Disaster by Design: The Aral Sea and Its Lessons for Sustainability*. Vol. 20 of *Research in Social Problems and Public Policy*, London: Emerald Group, 2012.

Edelstein, Michael R. "Aral Sea Demise As a Dry Run For Climate Change: From Cumulative to Cascading Impacts," pp. 427-454 in Michael R. Edelstein, Astrid Cerny and Abror Gadaev (Eds.). *Disaster by Design: The Aral Sea and Its Lessons for Sustainability*. Vol. 20 of *Research in Social Problems and Public Policy*, London: Emerald Group, 2012.

Edelstein, Michael R. "Educating for Sustainability." *International Journal of Decision Ethics.* VII.3, summer, 2012, pp. 67-80.

Edelstein, Michael R. " The Psychology of the New Warming War: Paradigm Writing as the Task of Educational Psychology" in Tatiana Andreschenko (Ed.) Proceedings of the Conference, "Educational Psychology for the 21st Century." Volgograd State Pedagogical University, Volgograd, Russia. September 14-16, 2011.

Edelstein, Michael R. "Privacy and Secrecy: Public Reserve as a Frame for Examining the BP Gulf Oil Disaster" pp. 23-52 in S. Maret (Ed.). *Government Secrecy. Research in Social Problems and Public Policy*: Volume 19. Evergreen Publishers, 2011. Note this article won the Emerald Publishing Journal Submission Award for 2011.

Michael R. Edelstein. "SEQR and You will Find 'Er: The Integration of Sustainability Planning and Impact Assessment, Part 1." *Environmental Law in New York*, March 2010, 21, 3, pp. 41-47.

Michael R. Edelstein. "SEQR and You will Find 'Er: The Integration of Sustainability Planning and Impact Assessment, Part 2." *Environmental Law in New York*, April 2010, 21, 4, pp. 61-68.

Michael R. Edelstein. "Ecological Literacy: Damaged Environments and Damaged Children," pp. 33-36 in Denuse Bauerova (Ed), *Social Networking*. Ostrava, Czech Republic: Innovation of Education Institute, Faculty of Economics, VSB Technical University, 2009.

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Michael R. Edelstein. "Sustainable Campuses and Institutions: The Need to Lead and the Transformation to a New Social Paradigm," pp. 37-43 in Denuse Bauerova (Ed), *Social Networking*. Ostrava, Czech Republic: Innovation of Education Institute, Faculty of Economics, VSB Technical University, 2009.

Michael R. Edelstein. "Social Learning, Sustainability and the Importance of Social Networking," in Denuse Bauerova (Ed), *Social Networking*. Ostrava, Czech Republic: Innovation of Education Institute, Faculty of Economics, VSB Technical University, 2009.

Michael R. Edelstein. "The New Warming War: Challenges of Shifting to a Sustainable World Paradigm" pp. 51-53 in *Ecological Problems of the Global World*, Herald of the International Academy of Sciences (Russian Section), Special Issue, Moscow, Russia, 2009.

Michael R. Edelstein. "Changing Global Language, Meaning and Action: Moving Past Lip Service toward a Sustainable World," pp. 385-389 in V. Kurasik (Ed.), "Current Issues of Linguo-didactics and Linguistics: Core Meaning, Trends, and Perspectives." Volgograd, Russia: Volgograd State Pedagogical University, 2009.

Michael R. Edelstein. "Ecological Literacy in the Undergraduate Curriculum: Ramapo College of New Jersey's Pioneer Sustainability Curricular Infusion Project" pp. 23-31 in Janice Woodhouse (Issue Editor) *The Place for Sustainability in Higher Education*, Special Issue of *Thresholds in Education*, Vol. XXXV, Nos. 1 & 2, Spring/Summer 2009.

Michael R. Edelstein. "Sustainability and the Need to Deal with the Contaminated Legacy: A Comparison of Russia and the U.S.," pp. 1-12 in Edelstein, Michael R., Maria Tysiachniouk, Ph.D. and Lyudmila V. Smirnova, Ph.D. (Eds.) *Cultures of Contamination: Legacies of Pollution in Russia and the U.S.* Vol. 14 of *Research in Social Problems and Public Policy*, Elsevier, 2007.

Janice Hastrup, Sherilyn N. Thomas and Michael R. Edelstein. "Fear of Cancer in a Rural Appalachian Community Following Notification of an Environmental Hazard," pp. 93-116 in Edelstein, Michael R., Maria Tysiachniouk, Ph.D. and Lyudmila V. Smirnova, Ph.D. (Eds.) *Cultures of Contamination: Legacies of Pollution in Russia and the U.S.* Vol. 14 of *Research in Social Problems and Public Policy*, Elsevier, 2007.

Michael R. Edelstein and Maria Tysiachniouk. "Psycho-Social Consequences Due to Radioactive Contamination in the Techa River Region of Russia," pp. 185-204 in Edelstein, Michael R., Maria Tysiachniouk, Ph.D. and Lyudmila V. Smirnova, Ph.D. (Eds.) *Cultures of Contamination: Legacies of Pollution in Russia and the U.S.* Vol. 14 of *Research in Social Problems and Public Policy*, Elsevier, 2007.

Michael R. Edelstein. "Hanford: The Closed City and Its Downwind Victims," pp. 253-306 in Edelstein, Michael R., Maria Tysiachniouk, Ph.D. and Lyudmila V. Smirnova, Ph.D. (Eds.) *Cultures of Contamination: Legacies of Pollution in Russia and the U.S.* Vol. 14 of *Research in Social Problems and Public Policy*, Elsevier, 2007.

Lyudmila V. Smirnova and Michael R. Edelstein. "Chernobyl: A Liquidator's Story," pp. 361-372 in Edelstein, Michael R., Maria Tysiachniouk, Ph.D. and Lyudmila V. Smirnova, Ph.D. (Eds.) *Cultures of Contamination: Legacies of Pollution in Russia and the U.S.* Vol. 14 of *Research in Social Problems and Public Policy*, Elsevier, 2007.

Michael R. Edelstein and Catherine McVay Hughes. "Coming Clean After 9/11: The Continuing World Trade Center Disaster," pp. 409-446 in Edelstein, Michael R., Maria Tysiachniouk, Ph.D. and Lyudmila V. Smirnova, Ph.D. (Eds.) *Cultures of Contamination: Legacies of Pollution in Russia and the U.S.* Vol. 14 of *Research in Social Problems and Public Policy*, Elsevier, 2007.

Michael R. Edelstein and Lyudmila V. Smirnova. "The Parable of the Lion's Bridge: Potentials for Mutual Learning between Cultures of Contamination," pp. 465-492 in Edelstein, Michael R., Maria Tysiachniouk, Ph.D. and Lyudmila V. Smirnova, Ph.D. (Eds.) *Cultures of Contamination: Legacies of Pollution in Russia and the U.S.* Vol. 14 of *Research in Social Problems and Public Policy*, Elsevier, 2007.

Michael R. Edelstein, "The Realities of Sustainable Practice," pp. 297-310 in Trent Schroyer and Thomas Golodik (Eds.). *Creating a Sustainable World: Past Experiences/Future Struggles*. N.Y.: Apex Press. 2006.



Michael R. Edelstein, "Terrorism as a Contaminating Disaster." *Ecopedagogika* (Sholokhov Moscow State Open Pedagogical University, Moscow), No. 3 2005, pp. 45-52.

Michael R. Edelstein, "Sustaining Sustainability," pp. 271-292 in Geoff Chase and Peggy Barlett (Eds.), *Strategies for Sustainability: Stories from the Ivory Tower*. Boston: MIT Press. 2004.

Michael R. Edelstein, "Weight and Weightlessness: Professional versus Paradigmatic Issues in Weighing the Psycho-Social Impacts of Proposed Environmentally Hazardous Facilities in the Administrative Law Process." In Rabel Burdge (Ed.), *The Practice of Social Impact Assessment: Special Issue of Impact Assessment and Project Appraisal*, 21(3) September, 2003, pp. 195-303.

Michael R. Edelstein. "Sustainable Innovation and the Siting Dilemma: Thoughts on the Stigmatization of Projects Good and Bad." *Journal of Risk Research*, 6(1) 2003.

Michael R. Edelstein, "Contamination: the Invisible Built Environment." In Robert Bechtel and Arza Churchman, (Eds.) *The Handbook of Environmental Psychology*. N.Y.: John Wiley and Sons, 2002, pp. 559-588.

Smirnova, Ludmila, Ph.D. and Michael R. Edelstein, Ph.D. "Educational Foundations for Anticipatory and Participatory Social Learning: A Case Study in Ecological Literacy." In Jonathan Reisman, Polina Agakhanians, Maria Tysiachniouk and Michael R. Edelstein (Eds.), *Public Participation in Environmental Impact Assessment in Russia and United States*. Publishing Group of the Research Institute of Chemistry of St. Petersburg State University, 2002.

Michael R. Edelstein, "Crying Over Spoiled Milk: Contamination, Visibility and Expectation in Environmental Stigma," pp. 41-68 in James Flynn, Paul Slovic, and Howard Kunreuther (Eds.). *Risk, Media, and Stigma*. London: EarthScan, 2001.

Michael R. Edelstein, "Review: A Hazardous Inquiry: The Rashomon Effect at Love Canal by Alan Mazur," *University of Buffalo Law Journal*, 2001.

Michael R. Edelstein, Forward to *Fostering a Sustainable Future*. Maria Tysiachniouk and Noel Deang (Eds.), St. Petersburg, Russia: Research Institute of Chemistry, St. Petersburg University, 2000.

Michael R. Edelstein, "'Outsiders Just Don't Understand': Personalization of Risk and the Boundary between Modernity and Postmodernity," pp. 123-142 in Maurie Cohen (Ed.) *Risk in the Modern Age: Social Theory, Science and Environmental Decision-Making*. New York: St. Martin's Press, 2000.

Scott A. Thornton, Esq. and Michael R. Edelstein, Ph.D. "Citizen Enforcers or Bothersome Meddlers? A Plaintiff's Perspective on the Orange County Landfill Case." *Environmental Law in New York*, 10, 6, June 1999.

Michael R. Edelstein, "The Challenge of Implementing Sustainable Planning in a Troubled American City," pp. 37-60 in Maria Tysiachniouk and George McCarthy, *Towards a Sustainable Future: Environmental Activism in Russia and the United States--Selected Readings*, St. Petersburg, Russia: Publishing Group of the Institute of Chemistry, St. Petersburg State University, 1999.

Michael R. Edelstein. "Environmental Contamination and Housing" in William Van Vliet (ed.) *The Encyclopedia of Housing*, Thousand Oaks, Ca. Sage Publications, Inc., 1998.

Michael R. Edelstein. Book review of *Public Reactions to Nuclear Waste* by Riley Dunlap, Michael Kraft and Eugene Rosa. *Political Psychology*, 18, 1, March 1997, 185-8.

Richard Rich, Michael Edelstein, William Hallman and Abraham Wandersman, "Citizen Participation and Empowerment: The Case of Local Environmental Hazards." *American Journal of Community Psychology*, 23, 5, 1995, pp. 657-676.

Edelstein, Michael R. "Disaster Revisited: Bhopal and Chernobyl---What are the Lessons?" pp.305-336 in William J. Makofske and Eric Karlin (Eds.), *Technology and Global Environmental Issues*, New York, Harper Collins, 1995.

Edelstein, Michael R. and Deborah A. Kleese. "The Cultural Relativity of Impact Assessment: Native Hawaiian Opposition to Geothermal Energy Development. *Society and Natural Resources*. Vol. 8, February, 1995, pp. 19-31.

Edelstein, Michael R. "When the Honeymoon is over: Environmental Stigma and Distrust in the Siting of a Hazardous Waste Disposal Facility in Niagara Falls, New York," pp. 75-96 in William Freudenburg and Ted Youn, *Research in Social Problems and Public Policy*, Greenwich, Conn.: JAI Press Inc., Vol. 5, 1993.

Edelstein, Michael. "Public and Private Perceptions of Risk," pp. 60-64 in Thomas Burke, Nga Tran, Jane Roemer and Carol Henry (Eds.) *Regulating Risk: The Sciences and Politics of Risk*, Washington: the International Life Systems Institute Press, 1993.

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Edelstein, Michael R. "NIMBY as a Healthy Response to Environmental Stigma Associated with Hazardous Facility Siting" in Gary Leitch (Ed.) *Hazardous Material/Wastes: Social Aspects of Facility Planning and Management*. Winnipeg, Manitoba: The Institute for Social Impact Assessment, 1992, pp. 413-431.

Edelstein, Michael R. "Ecological Threats and Spoiled Identities: Radon Gas and Environmental Stigma" in Stephen Couch and J. Stephen Kroll-Smith (Eds.), *Communities at Risk: Community Responses to Technological Hazards*. Worster: Peter Lang, 1991, pp. 205-226.

Edelstein, Michael R. "Chernobyl and the Spectre of Global Nuclear Power Accidents" in William Makofske, Howard Horowitz, Eric Karlin and Patricia McConnell (Eds.) *Technological Development and the Global Environment*. Mahwah, N.J.: Institute for Environmental Studies, Ramapo College of New Jersey, 1991.

Edelstein, Michael R. "Bhopal and the Spectre of Third World Chemical Disaster" in William Makofske, Howard Horowitz, Eric Karlin and Patricia McConnell (Eds.) *Technological Development and the Global Environment*. Mahwah, N.J.: Institute for Environmental Studies, Ramapo College of New Jersey, 1991.

Edelstein, Michael R. "Bhopal and Chernobyl: What are the Lessons?" in William Makofske, Howard Horowitz, Eric Karlin and Patricia McConnell (Eds.) *Technological Development and the Global Environment*. Mahwah, N.J.: Institute for Environmental Studies, Ramapo College of New Jersey, 1991.

Edelstein, Michael R. Book Review of Envisioning a Sustainable Society: Learning Our Way Out by Lester Milbrath. *Contemporary Psychology*, 36, 9, September 1991, p. 806.

Edelstein, Michael R. "The Psychological Basis for the 'NIMBY' Response," pp. 271-278 in John Andrews, Lydia Askew, Jeanne Bucsela, Daniel Hoffman, Barry Johnson and Charles Xintaras (eds.), *Proceedings of the Fourth National Environmental Health Conference: Environmental Issues---Today's Challenge for the Future*. Washington, D.C.: U.S. Department of Health and Human Services, Public Health Service, November, 1990.

Edelstein, Michael R. "Psychosocial Impacts on Trial: The Case of Hazardous Waste Disposal" in Dennis Peck (Ed.), *Psychosocial Effects of Hazardous Toxic Waste Disposal on Communities*. Springfield, Ill.: Charles Thomas, 1989.

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Edelstein, Michael R. Book Review of "Invisible Trauma: The Psychological Effects of Invisible Environmental Contaminants," *Social Inquiry*, summer, 1989.

Edelstein, Michael R.; Margaret Gibbs and Susan Belford. "Psychosocial Issues in the Perception of Radon Gas Exposure" in EPA Office of Radiation Programs (Ed.) *Proceedings of the EPA Radon Symposium*, October 1988, Denver, Co. U.S. Government Printing Office, 1989.

Makofske, William and Michael R. Edelstein. "Results of the Orange Environment, Inc. Radon Testing Program" in EPA Office of Radiation Programs (Ed.), *Proceedings of the EPA Radon Symposium*, October 1988, Denver, Co., U.S. Government Printing Office, 1989.

Edelstein, Michael R. "Water, Water Everywhere, But not a Drop to Drink: The Case of Groundwater Contamination in Jackson, N.J." pp. 65-84 in Mick Charles and John Kim (eds.) *Crisis Management*. Springfield, Ill.: Charles Thomas, 1988.

Edelstein, Michael R. "A Framework for Examining Psychosocial Impacts of Toxic Exposure in LDC's" pp. 237-251 in International Association for Impact Assessment, *Proceedings of the International Workshop on Impact Assessment for International Development*. Vancouver, B.C.: International Association of Impact Assessment, 1988.

Edelstein, Michael R. "Working Group Report on Hazardous and Toxic Chemicals" pp. 237-251 in International Association for Impact Assessment, *Proceedings of the International Workshop on Impact Assessment for International Development*. Vancouver, B.C.: International Association of Impact Assessment, 1988.

Edelstein, Michael R. and Valari Boyle, "Media and the Perception of Radon Risk," in Makofske and Edelstein, 1988, pp. 241-251.

Gibbs, Margaret, Michael Edelstein and Susan Belford. "Psychological Impacts of Radon Gas Exposure," in Makofske and Edelstein, 1988, pp. 252-258.

Edelstein, Michael R. and Liana Hoodes, "A Grass Roots Model for Radon Exposure," in Makofske and Edelstein, 1988, pp. 393-407.

Edelstein, Michael R. and Abraham Wandersman, "Community Dynamics in Coping with Toxic Exposure," 69-112 in Irwin Altman and Abraham Wandersman (eds.), *Neighborhood and Community Environments*, Volume 9 in the series Human Behavior and the Environment, Plenum Press, 1987.

Edelstein, Michael R. review of "Deep Ecology: Living as if Nature Mattered" by Devall and Sessions and *Deep Ecology* by Tobias, *Journal of Architectural and Planning Research*, Vol. 4 (1), 1987, 77-80.

Edelstein, Michael R. "Toward a Theory of Environmental Stigma" pp. 21-25 in Joan Harvey and Don Henning (eds.), *Public Environments*. Ottawa, Canada: Environmental Design Research Association, 1987.

Edelstein, Michael R. "Disabling Communities: The Impact of Regulatory Proceedings." *Journal of Environmental Systems*, Vol. 16 (2), 1986-87, 87-110.

Edelstein, Michael R. "Toxic Exposure and the Inversion of Home." *Journal of Architecture and Planning Research*, Vol. 3, 1986, 237-251.

Edelstein, Michael R. "Psychosocial Impacts of Toxic Exposure: An Overview" pp. 761-776 Henk Becker and Alan Porter (eds.), *Impact Assessment Today Vol.II*. Utrecht: Jan van Arkel, 1986.

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Edelstein, Michael R. "Toxic Exposure and the Inversion of Home" in Martin Krampen (ed.) *Environment and Human Action*, Hochschule der Kunste Berlin, 1986.



Edelstein, Michael R., "Social Impacts and Social Change: Some Initial Thoughts on the Emergence of a Toxic Victims Movement," *Impact Assessment Bulletin*, 3, 3, 1984-85, pp. 7-17.

Edelstein, Michael R. and William Makofske. "The Karst Topography of Southern Orange County: An Analysis of the Relationship between Soluble Bedrock, Land Use and Land Use Policy." *New York Land Report*, December, 1984.

Edelstein, Michael R. "Contaminated Children: Toxic Exposure in Jackson, New Jersey." *Childhood Quarterly*, January, 1983.

Edelstein, Michael R. "The Social Impacts of Residential Exposure to Toxic Waste." *Social Impact Assessment*, 79/80, April-May, 1983.

Edelstein, Michael R. "Answer to the Editor's Question, 'What Does an Environmental Psychologist Find Interesting about Toxic Wastes?'" *Design Research News* XI, 3, March, 1981.

Edelstein, Michael R. "Energy, Conservation and Lifestyle" in Joel Kameron (Ed.), *The Social Dimensions of Energy Options*. Mahwah, N.J.: Ramapo College of New Jersey, 1980.

Edelstein, Michael R., "Bergen County as an Environment for High School-Aged People." *Childhood City Newsletter*, Teen-Environment Issue, Vol.16, April, 1979.

Edelstein, Michael R., "The Real Energy Crisis: Lifestyle and the Prospect of Changing Patterns of Energy Use." *Ramapo Papers*, Vol. 11, No.3, 1979.

Edelstein, Michael R. "Participatory Futurism: Merging the Evolution of the Future with the Process of the Present" pp. 516-530 in Hans Joachim Harloff (Ed.), *Bedingungen des Lebens in der Zukunft und die Folgen fur die Erziehung* Berlin: Technische Universitat Berlin, 1978.

Edelstein, Michael R., Joel Kameron, Matina Colombotos and Syrell Lehman. "Psychological Impact of Traffic and Attendant Factors of Air Pollution, Noise and Safety, as well as Green Space Availability in the Town of Paramus, N.J." in Richard Graham (Ed.), *An Applied Natural Resource Inventory of the Borough of Paramus, New Jersey*. Paramus: Paramus Environmental Commission, 1975.

#### **Editorial Work:**

Edelstein, Michael R., Ph.D. Astrid Cerny Ph.D. and Abror Gadaev, Ph.D. *Disaster by Design: The Aral Sea and Its Lessons for Sustainability*. Vol. 20 of *Research in Social Problems and Public Policy*, Emerald, forthcoming 2012. Principle editor and author.

Edelstein, Michael R., Ph.D. Maria Tysiachniouk, Ph.D. and Lyudmila V. Smirnova, Ph.D. Eds. *Cultures of Contamination: Legacies of Pollution in Russia and the U.S.* Vol. 14 of *Research in Social Problems and Public Policy*, Elsevier, 2007. Principle editor and author.

*Radon in the Environment*, with William Makofske, 1988.

*Childhood Quarterly*, January, 1983. Edited issue on children and environmental hazards.

Manuscript review for MIT Press, Westview Press, University of California Press, Columbia University Press, University of Arizona Press, *American Psychologist*, *Environment and Behavior*, *Journal of Health Psychology*, *Environmental Design Research Association*, *Impact Assessment Bulletin*, *Journal of Social Psychology*, *Research in Social Problems*, *Public Policy*, *Social Science and Medicine*, *Qualitative Sociology*, *Sociological Inquiry*, *Social Science Research*, *Journal of Environmental Psychology*, *Journal of Community Psychology*, *Human Organization*, *Political Ecology* and for various authors.

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## PAPERS

### Conference and Other Professional Presentations:

“Creating a different future for the Aral Region: Rebuilding the Land Combining Ecological and Social Restoration, Bioregional Cooperation and Sustainable Water and Land Management,” presentation to the International Conference on “Joint actions to mitigate the consequences of the Aral catastrophe: new approaches, innovative solutions, investments,” Tashkent, Uzbekistan, June 8, 2018.

“How We Think About Protecting the Environment.” Keynote Address: Protecting our Environment, Dominican College, Orangeburg, NY March 18, 2018.

“Bioregional Thinking as a Guide to Building a Sustainable Future for Central Asia,” paper presented to the International Conference on Security and Sustainable Development in Central Asia under the Auspices of the United Nations, Samarkand, Uzbekistan, November 10, 2017.

“Uzbekistan’s Dry Run for Climate Change: Implications for Sustainability” paper presented to the Samarkand Architectural and Engineering Institute, November 9, 2017 and the World University of Economy and Diplomacy, Tashkent, November 8, 2017.

“Sustainability Literacy and the Core Mission of 21<sup>st</sup> Century Schools.” Invited address. Kappa Delta Pi Educational Honors Society Convo, Pittsburgh, Pa., October 26, 2017.

“Understanding Environmental Impacts on Vulnerable Populations through Psycho-Social Impact Assessment,” Webinar for the International Association of Impact Assessment, July 19, 2017. 1 ½ hours. <https://youtu.be/yNAdfn2yWi4>, Extended Q/A, 2.5 hours, <http://www.iaia.org/webinars.php>.

“When Fire is Sacred.” Presented to the Session: Expanding Impact Assessment by Including Indigenous Concepts Of Inter-Relationships; Impact Assessment’s Contribution to the Global Efforts in Addressing Climate Change Annual Conference of the International Association for Impact Assessment Montreal, Canada. April 5, 2017.

“Aral Sea: Lessons for Bio-Regional Health.” Presented To The Session: Standardizing Uncertainty Systematic Approaches to Climate Resilience for Water Security Impact Assessment’s Contribution to the Global Efforts in Addressing Climate Change Annual Conference of the International Association for Impact Assessment Montreal, Canada., April 5, 2017.

“Challenges of Recovery: Lessons of a Tour of Fukushima.” Presented to the conference Fukushima and the Human Consequences of Nuclear Disaster. Mahwah, New Jersey, February 17, 2017.

Lyudmila Smirnova, Michael Edelstein, Nellie Deutsch (2016). “Implementing MOOCs: Promise, Prospects and Lessons” at EdMedia 2016 World Conference on Educational Media and Technology, Vancouver, Canada, June 28-30, 2016.

“Psycho-Social Consequences of Water Contamination,” Invited presentation to the IROC program, Mount St. Mary College, Newburgh, NY. October 23, 2016.

“Psycho-Social and Environmental Justice Impact Assessment: Better Understanding Impacts on Vulnerable Populations.” Presentation at the International Association of Impact Assessment, Aichi-Nagoya Japan, May 2016.

“Toward a Sustainable Uzbekistan.” Presentation to the Academy of Public Administration, Tashkent, Uzbekistan, March 30, 2015.

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"Experience of a New York NGO: The Battle for Environmental Control." Presentation to the EcoMovement and the Oliys Majalis of the Republic of Uzbekistan, Tashkent, March 27, 2015.

"Nuclear Legacy: Prelude to Fukushima." Talk to Ramapo Community as part of the Fukushima Anniversary celebration, February 26, 2015.

"Making the Sustainable Transition." Opening keynote in the Healthy and Sustainable Living MOOC 2014, September 6, 2015 (HSLM14) <http://www.wiziq.com/online-class/2063646-hslmooc14-making-the-sustainable-transition>.

"Charting the Path to a Sustainable Future." Presentation at MMVC14 online conference. August 3, 2014.

"Sustainability as a Frame for Decision Ethics." 8<sup>th</sup> Annual Seminar on DECISION ETHICS: Global Challenges of the 21st Century. New York City, April 9, 2014.

Conference Summary and Conclusion. "Peoples' Sustainability Treaties: Converging on a Peoples' Transformative Agenda Post 2015. Ramapo College of New Jersey, April 5, 2014.

"Cultures of Contamination and Their Psycho-Social Consequences" Invited presentation to the Department of Anthropology, Uppsala University, Sweden, March 17, 2014.

"Bringing Sustainability On-Line: Learning to Engage the Future through On-line Education." Presentation to the MMVC13 Moodle Moot Virtual Conference 13, WizIQ, August 24, 2013.

"Psycho-Social Impacts from the Talco Aluminum Plant," paper delivered to the International Workshop "On Measures of neutralization of catastrophic impact on the environment and population health of the industrial activity of the Tajik state unitary enterprise (SUE) TALCO," Senate of Uzbekistan, Tashkent, August 19, 2013.

"Psycho-Social Damage as a Way to Prove Adverse Impacts to First Nation People." Presentation to the law firm Woodward and Company, LLP, Victoria, BC, June 27, 2013.

"Multiple Cascading Disasters of the Aral Sea," paper presented to the Association of Environmental Science and Studies (AESS) as part of a chaired session "Disaster by Design, Lessons of the Aral Sea for Sustainability," June 22, 2013.

"Community Experience of Contaminated Communities: Psycho-Social Impacts." Paper presented as part of the Session on Community Experience of Contaminated Communities: Contributions from the Social Sciences. Environmental Health Disparities & Environmental Justice Workshop. Sponsored by the National Institute of Environmental Health Sciences, Research Triangle, North Carolina, July 29, 2013.

"Aral Sea Disaster by Design," paper presented to the Association of Environmental Science and Studies (AESS) as part of a chaired session "The Aral Disaster" with Uzbek Ambassador to the United Nations Diliyor Khakimov, June 22, 2013.

"Adverse Impacts of Alberta's Intensive Energy Production and Associated Regulatory Processes," paper presented at the International Association of Impact Assessment (IAIA). Calgary, Alberta, May 16, 2013.

"Psycho-Social Impacts of Gas and Tar Sands: Projects and Process." Invited address, University of Alberta, Edmonton, Alberta, May 9, 2013.

"Shooting the Message: Rachel Carson, Human Causation and a Malevolent Environment," paper presented to the Symposium on Silent Spring, Ramapo College of NJ, December 2, 2012.

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"An Academics Observations of Rio." Workshop: After Rio+20: What Comes Next? Ramapo College of NJ, October 15, 2012.

"Lessons of the Aral Sea for Students of Diplomacy." Invited address at the Institute for Economics and Diplomacy, Tashkent, Uzbekistan, September 13, 2012.

"Creating a Sustainable Entrepreneurial Sector in Uzbekistan." Invited address to the International Conference on Entrepreneurship and Small Business. Tashkent, Uzbekistan, September 14, 2012.

"The Importance of Bioregional Thinking." Invited presentation at the Mountain Symposium, Rio+20 Earth Summit, Rio de Janeiro, June 18, 2012.

"Coming Clean about Cleanup." Invited presentation to the workshop "Social, Psychological and Economic Impacts of Superfund and Other Contaminated Sites." Sponsored by National Institute for Environmental Health Science and the Brown University Superfund Research Program. May 9, 2012. Brown University, Providence, R.I.

"Commentary on the film "Living Downstream." Invited presentation for the Bard Environmental Policy masters Program, Annondale-on-Hudson, N.Y. April 17, 2012.

"The Human costs of Alberta's Energy Production." Invited address to the Community Psychology Program, Wilfrid Laurier University, Waterloo, Ontario, Ca. March 5, 2012.

"Diversity, Justice and Inclusion" Participation in panel discussion with journalists Jan Barry and Ben McGrath and Chuck Stead. Antioch New England, Ph.D. Program in Environmental Studies, Hilburn, N.Y., February 24, 2012.

"Educating for Sustainability" Invited address to the International Conference "Upbringing of an Educated and Intellectually Advanced Generation as the most important condition of sustainable development and modernization of the country." Tashkent, Uzbekistan, February 17, 2012.

"The Aral Sea as a Disaster." Invited presentation, Tashkent Financial Institute, Tashkent, Uzbekistan, February 13, 2012.

"The History of Sustainability at Ramapo College." Invited presentation to the "Creating a Sustainable Campus Workshop" organized by NJHEPS and Kean University, Ramapo College of NJ, December 2, 2011.

"Why is Environmental Cleanup So Slow?" Chair and participant in panel discussion with Walter Mugdan, EPA, journalist Jan Barry and Chuck Stead. Ramapo College, October 4, 2011.

"Psychological Perspectives: Educating for Sustainability." Volgograd State Pedagogical University, September 14, 2007. Keynote address to the conference Educational Psychology for the 21st Century, Volgograd State Pedagogical University, September 14, 2011.

Edelstein, Michael R. "A Confluence of Major Disasters: The Aral Sea Disaster in Perspective." Concluding talk to the conference "Exchanging Lessons of the Aral Sea Disaster I." Samarkand, Uzbekistan, June 9, 2011.

"Collaboration in Interdisciplinary Research: Preparing Environmental Students for the Real World." Paper presented at the Fairfield University conference on Collaboration in Interdisciplinary Research, June 3, 2010.

"Ecological Literacy: Damaged Environments and Damaged Children, invited paper presented at the Conference Sunflower 2009, Celadna, Czech Republic, November 11, 2009.

"Sustainable Campuses and Institutions: The Need to Lead and the Transformation to a New Social Paradigm," invited paper presented at the Conference ICT Bridges 2009, Celadna, Czech Republic, November 11, 2009.

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"Social Learning, Sustainability and the Importance of Social Networking," invited paper presented at the Conference Silesian Moodle Moot 2009, Celadna, Czech Republic, November 12, 2009.

"The New Warming War: Challenges of Shifting to a Sustainable World Paradigm," invited paper presented at the conference *Ecological Problems of the Global World*, M.A. Sholokhov Moscow State Humanitarian University, October 26, 2009, Moscow, Russia.

"Revisiting Our Earth Legacy." Invited Keynote Address, Volgograd State Pedagogical University, Volgograd, Russia, November 20, 2009.

"Changing Global Language, Meaning and Action: Moving Past Lip Service toward a Sustainable World." Invited paper, Volgograd State Pedagogical University, Volgograd, Russia, November 21, 2009.

"Environmental Turbulence and Environmental Literacy as Theoretical Frames for the Transition to a Sustainable Society." Invited presentation to the program in Sustainable Urban Environments, NYU, September 30, 2009.

"Leading the New Sustainability Paradigm." Invited presentation to the COPLAC Session: "Innovations in Sustainable Education." AAC&U Annual Conference, Seattle, Washington, January 22, 2009.

"College as a Macrocosm." Faculty Resource Network. San Francisco, Ca. November 21, 2008.

"The Masters in Sustainability Studies." Presentation with Wayne Hayes at the American Association for Sustainability in Higher Education, Raleigh, N.C. November 10, 2008.

"Integrating Sustainability into the Curriculum: The Ramapo Experience." Presentation to the COPLAC Summer Meeting, Ashland, Oregon, June 21, 2008.

"A Climate for Change: The role of Environmental Psychology and Design in bringing about Eco-Social Transformation." Four hour intensive program presented to the Environmental Design Research Association's 39<sup>th</sup> Conference, Veracruz, Mexico, May 28, 2008.

"Transitioning To Sustainability in a Time of Living on Thin Ice." Invited address. National Environmental Partnership Summit, Baltimore, Md., May 22, 2008.

"Sustainability as Revolution: A Framework for Campus/Community Action." Invited opening address, conference of the Sustainable Business Institute, Fairleigh Dickinson University, Madison, NJ, May 2, 2008.

"Efforts to Overcome Environmental Stigma: The Case of the New Jersey Meadowlands." Seminar presented to the Anisfield School of Business, Ramapo College of New Jersey, April 2, 2008.

"Creating a Sustainable Future for the Hudson Valley." Invited lecture. Hudson Highlands Nature Museum. Cornwall-on-Hudson, October 25, 2007.

"Sustainable Campuses." Invited address. Caldwell Symposium on Environmental Concerns. Caldwell College. September 30, 2007.

"Transforming Our Campuses into Leading Institutions for Sustainability" Invited address to the COPLAC Session: Roles of Sustaining Democracy, Sustaining the Environment: The Liberal Arts Mission. American Association of Colleges & Universities, New Orleans, Louisiana, January 19, 2007.

"Lessons from the Pencor Masada Oxynol Facility Siting Effort in Middletown, NY." Conference: Managing Solid Waste Sustainably. Sponsored by the New York City Bar Association. December 4, 2006.

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"Infusing Ecological Literacy into the Curriculum: The Ramapo Model." COPLAC Conference, Asheville, North Carolina, June 10, 2006.

"The Contribution of Blowback to the Psycho-Social Impacts for the Residential Community of Lower Manhattan after the WTC Disaster." Paper presented with Catherine McVay Hughes to the Society for the Study of Social Problems, Philadelphia, August 14, 2005.

"Policy Blowback: Lapses in Risk Communication, Precaution, Research and Response and Their Consequences for Local Community Trust in the Aftermath of the World Trade Center Disaster." Paper presented with Catherine McVay Hughes to the Society for the Study of Social Problems, Philadelphia, August 14, 2005.

"Valuing Indigenous Impacts: Culture and Contamination---Environmental Pollution as Cultural Contamination." Paper presented at the International Association for Impact Assessment, Boston, June 2, 2005.

"Teaching Environmental Impact Assessment." Paper presented at the International Association for Impact Assessment, Boston, June 2, 2005.

"Sustainability Planning and Impact Assessment: An Update." Paper presented at the International Association for Impact Assessment, Boston, May 31, 2005.

"Psycho-Social Impacts Amongst a Neglected Population: The Residential Community of Lower Manhattan after the WTC Disaster." Paper presented with Catherine McVay Hughes, International Association of Environmental Epidemiologists, New York, August 4, 2004.

"Lapses in Risk Communication, Precaution, and Response and Their Consequences for Local Community Trust in the Aftermath of the World Trade Center Disaster." Paper presented with Catherine McVay Hughes and George Thurston, International Association of Environmental Epidemiologists, New York, August 3, 2004.

"Cultural, Environmental and Community Impact as Psychological Impacts," paper presented in the symposium "Environmental Pollution and Cultural Pollution: Impacts to Native Peoples Due to the Contamination of Place." Environmental Design Association, Albuquerque, New Mexico, June 3, 2004

"Social Remediation: Adapting Humans to a Contaminated Environment." Paper with Dr. Lyudmila Smirnova. Presented in the session "Contamination and Cleanup in Cross Cultural Perspective." Environmental Design Association, Albuquerque, New Mexico, June 3, 2004.

"Psychological Consequences as a Translation of Indigenous Cultural, Environmental and Community Impacts." Eastern Psychological Association, Washington D.C. April 17, 2004.

"Program Based Study Abroad: The Environmental Studies Experience," panel presentation for the 2003 COPLAC Conference on "Global Education and Civic Engagement," Saturday June 21, 2003, Mahwah, New Jersey.

"Comparison of Russian and American Approaches to Addressing Contaminated Communities." Address to the Summer Interdisciplinary School: "Development of Civic Initiatives in Contaminated Communities." August 10 2002, St. Petersburg, Russia.

"Mobilization of Communities in Polluted Territories." Paper presented to the conference "Paths to Success in Addressing the Problems of Pollution." August 2 2002, Cheliabinsk, Russia.

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"Thoughts on 9/11 and the Cultural Acceptance of Risk: Cross Cultural Considerations of Americans and Russians."

Paper co-presented with Lyudmila Smirnova to the World Congress of Sociology, July 10, 2002, Brisbane, Australia.

"9/11, Contamination Events, Paradigmatic Thought and the Prospects for a Sustainable Future." Paper presented to the International Congress of Applied Psychology, July 8 2002, Singapore.

"Sustainability Planning and Impact Assessment." Paper presented to the International Association of Impact Assessment, June 20, 2002, The Hague, Netherlands.

"Greening Phase VII: Social Design for Sustainability. Workshop for the Environmental Design Research Association Conference, paper co-presented with Nancy Mackin and Kate "Ali" Higgins, March 24, 2002, Philadelphia, Pa.

"Understanding Public Attitudes toward Environmental Impacts." Paper presented to the Environmental Design Research Association Conference, March 23, 2002, Philadelphia, Pa.

"Environmental Stigma: the Social Impacts of Water Contamination" Invited address, American Water Works Association, New Jersey Section. Thursday March 21, 2002. Trump Plaza, Atlantic City, N.J.

"Ecological Literacy" Keynote address. Conference of the New Jersey Higher Education Partnership for Sustainability. Drew University, Madison, New Jersey, October 15, 2001.

"From 'Daa' to 'Da: Thoughts on Teaching and Doing Sustainability.'" Invited address and demonstration of pedagogical techniques. The CEP-Russia Environmental Policy Institute, St. Petersburg Russia, June 20, 2001.

"Innovation and Siting Dilemma: Thoughts on the Stigmatization of Projects, Good and Bad." Invited plenary paper to the conference hosted by Goteburg University: "New Perspectives in Siting Controversy," Glumslov, Sweden, May 17-20, 2001.

Invited participant in the working conference of U.S. and European Environmental Sociologists: Risk: Searching for Vocabularies that Work, New Orleans, March 9-11, 2001.

"Environmental Impact Assessment as a Comparative Framework for the roles of NGOs, Government and Private Sector Activity in Russia and the U.S.: Public Policy and Pedagogy." Paper presented at the Association for Research on Nonprofit Organizations and Voluntary Action," November 16-18, 2000. New Orleans, Lo.

"Contaminated Environments: Implications for Children's Well-Being and Health." Invited address to the New York Association of School Psychologists: 2000 Conference Mastering the Millennium, Adam's Mark Hotel, Buffalo, New York, October 20, 2000 and included in the conference proceedings as pp. 102-109.

"Educating in a Hyper-Contaminated Environment: The Case of the Volgograd Ecological Gymnasium." Paper second-authored to Ludmila Smirnova and presented by Dr. Smirnova at the New York Association of School Psychologists: 2000 Conference Mastering the Millennium, Adam's Mark Hotel, Buffalo, New York, October 20, 2000 and included in the conference proceedings as pp. 102-109.

"Ramapo College's Eco-Literacy Project." Poster presentation at the Second Nature Northeast Regional Workshop: Shaping a Sustainable Future: Best Practices in Higher Education, Trinity Conference Center, West Cornwall Connecticut, October 12-15, 2000.

"Educational Foundations for Anticipatory and Participatory Social Learning: A Case Study in Ecological Literacy." Paper second-authored to Ludmila Smirnova and presented by Dr. Smirnova as a poster session at the Second Nature Northeast Regional Workshop: Shaping a Sustainable Future: Best Practices in Higher Education, Trinity Conference Center, West Cornwall Connecticut, October 12-15, 2000.

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"A Comparative Picture of Public Involvement in Environmental Decision Making." (With Maria Tysiachniouk, Smolney College, St. Petersburg, Ru. and Paulina Agakhanants, St. Petersburg Society of Naturalists, St. Petersburg, Ru.). Paper Presented by Dr. Tysiachniouk at the Conference of the Interdisciplinary Environmental Association, Montreal, Canada, June 23, 2000.

"Citizen Participation and Environmental Impact Assessment: The American Experience and Its Implications for Russian Practice." Keynote address to the conference on Public Participation and the Environment, Pestova, Russia, January 14, 2000.

"Thoughts on the Success of Environmental Assessment in Russia." Keynote Address at the Conference on Environmental Impact Assessment in Russia, St. Petersburg, Russia, January 21, 2000.

"Ecological Literacy and the Importance of Interdisciplinarity." Keynote to the convocation of faculty, Volgograd State Pedagogical University, Volgograd, Russia, February 2, 2000.

"Environmental Impact Assessment as a Pedagogical Model." Address to the faculty of science, Volgograd State Pedagogical University, February 4, 2000.

"The Potential for Sustainability Planning and Impact Assessment as an Integrated Process." Paper presented at the International Association for Impact Assessment conference, Glasgow, Scotland, June 1999.

"Uncivil Action: The Social and Psychological Consequences of Environmental Contamination," Earth Day lecture at the University of Buffalo, April 19, 1999.

"Three Mile Island: the Legacy of Twenty Years," address given at Penn State Capital Campus to mark the 20th anniversary of the Three Mile Island Disaster, March 24, 1999.

"Sustainability Planning and Impact Assessment," paper presented at the conference "Democracy in Action: Sustainable Communities in Russia and the U.S., August 26, 1998, Center for Independent Social Research, St. Petersburg, Russia.

"The Challenge of Implementing Sustainable Planning in a Troubled American City." Paper presented at the 4th Interdisciplinary Conference on the Environment, Washington D.C., July 10, 1998.

"Outsiders Just Don't Understand: The Need for Contextual Inquiry About Life in the Contaminated World." Paper presented at the workshop on Risk and Society, Oxford Centre for the Environment, Ethics and Society, Mansfield College, Oxford, England, June 29, 1997.

"Crying Over Spoiled Milk: Contamination, Visibility and Expectation in Environmental Stigma." Paper presented to the Annenberg Conference on Risk, Media and Stigma, March 23, 1997, Philadelphia, Pa.

"Ecological Literacy." Presentation to the Environmental Psychology Program, CUNY, March 19, 1997, New York City.

"The Lessons of Geologic Radon" Paper presented to the Society for Risk Analysis. December 9, 1996, New Orleans, Louisiana.

"The Dynamics of Local Environmental Activism." Invited paper and workshop conducted with Liana Hoodes for the Environment and Technology Division of the Society for the Study of Social Problems, New York City, August 17, 1996.

"The Contamination of Place." Paper presented at the Environmental Design Research Association Conference, Salt Lake City, Utah, June 14, 1996.

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"Ecological Literacy." Paper presented with Mary Ann Sorensen-Allachi and Wanda Kosinski at the Environmental Design Research Association Conference, Salt Lake City, Utah, June 16, 1996.

"Psychological Impacts of Contamination." Panel presentation at the invitation of the Agency for Toxic Substances and Disease Registry, Atlanta, Ga., September 11-13, 1995.

"Left in Limbo: Obstacles to Recovery from Toxic Contamination." Paper presented at the Society for the Study of Social Problems, Washington, D.C., August 19, 1995.

"Cities as an Anchor for Sustainable Development," panel presentation to the conference "Newburgh, N.Y.: People and Places," August 12, 1995.

"Ecological Literacy and Ecopsychology," presentation during the panel "Ecoliteracy" Learning to Think Ecologically." First Mid-Atlantic Environmental Conference, Ramapo College of New Jersey, April 8, 1995.

Participant in workshop of the working group on Psycho-Social Impacts of Toxic Exposure, New Orleans, La., Jan. 7-9, 1995.

"Psycho-Social Impacts of Contamination and the Toxic Tort." Invited address to the Environmental Law Session of the Colorado/Kansas Trial Lawyers Association Convention, Snowmass, Colorado, August 12, 1994.

"Reflections on the Adams Center Hazardous Landfill," Cable Access Conference Presentation on Live Television at Indiana University-Purdue University Fort Wayne as part of the series on "Trash TV," with Caron Chess from Rutgers University, May 23, 1994.

"Ecological Directions for Environmental Psychology." Paper presented at the Environmental Design Research Association, San Antonio, Texas, March 14, 1994.

"Stigma in Toxic Communities." Invited address to the "Fourth Scientific Assembly for Environmental Health." Washington D.C., September 17, 1993.

"Inversion of Nature: Contamination in an Appalachian Community." Paper presented at the Environmental Design Research Association, Chicago, Ill., April 2, 1993.

"When Alternative Energy is Kapu: Native Hawaiian Culture and Geothermal Energy Development." Paper written with Deborah Kleese. Presented at the Environmental Design Research Association, Chicago, Ill., April 1, 1993.

"Trouble in the Troposphere: The Other Ozone Problem." Paper written with and presented by William Makofske at the Environmental Design Research Association, Chicago, Ill., March 30, 1993.

"Clearing the Air: Implications of Atmospheric Ozone for Human Behavior." Presented at the Environmental Design Research Association, Chicago, Ill., March 31, 1993.

"The Role of Social Science in Understanding People's Perceptions of Environmental Problems and Developing Environmental Policy." Invited paper presented at the New Jersey Department of Environmental Protection and Energy, November 12, 1992.

"The Role of Psychology in Causing and Addressing Ecological Denial," invited address to Division 34, American Psychological Association, Annual Conference, Washington, D.C., August 17, 1992.

"Psychological Impacts in Contaminated Communities," invited opening address at the conference "Psychological Impacts in Contaminated Communities," sponsored by the New York State Department of Health and the Agency for Toxic Substances and Disease Registry, Rensselaerville, N.Y., June 8, 1992.

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"Emerging Coalitions for Environmental Issues---Some Considerations." Workshop paper presented at the annual conference of the Environmental Design Research Association, Boulder, Colorado, April 10, 1992.



"Social Impacts of Interconnected Social and Ecological Systems," invited address, Bard College Masters in Environmental Studies Program, Annondale-on-Hudson, November 2, 1991.

"The Dynamics of NIMBY in the 1990's: Communication Problem or Cultural Challenge?" Invited presentation at the First Annual Conference of the National Association of Environmental Communicators: "Communicating in the Environmental Decade." Chicago, Illinois, October 11, 1991.

"Author Meets the Critics: Michael Edelstein Contaminated Communities," presentation and discussion with panel of critics, Environment and Technology Division of the Society for the Study of Social Problems, Cincinnati, Ohio, August 23, 1991.

"The Cultural Relativity of Impact: Native Hawaiian Opposition to Geothermal Energy Development" presented with Deborah Kleese at the conference "Technology and Environmental Responsibility: A New Age for Impact Assessment," Champaign-Urbana, Ill., June 10, 1991.

"Perceiving Risk---What do People Worry about and Why." Invited paper presented at the conference "Regulating Risk: The Science and Politics of Risk," National Safety Council, Washington D.C., June 24-5, 1991.

"NIMBY as a Healthy Response to Environmental Stigma Associated with Hazardous Facility Siting." Invited paper presented at the conference "Hazardous Materials/Wastes: Social Aspects of Facility Planning and Management," Toronto, Canada, October 3, 1990.

"Contaminated Communities: Psychological Response to Toxic Environments," invited address to the Rockland County Psychological Association, Bear Mountain, N.Y. May 6, 1990.

"Local Activism and Environmental Ethics," invited paper at the conference: Ethics and Environment. Cornell University, Ithica, N.Y., April 30, 1990.

"Active Citizenry as the Basis for Responsible Environmentalism," invited address presented at the conference: Responsible Environmentalism. New Jersey Institute of Technology, Newark, N.J. April 27, 1990.

"Environment and Behavior in a Policy Context---The Cases of the New Jersey Ozone Warning Program and the Social Impacts of I- 287." Paper co-presented with Nadine Christopher and David Greene at the Environmental Design Research Association, Champaign- Urbana, Illinois, April 8, 1990.

"Social and Psychological Issues Relating to Possible Claims of Adverse Health Effects from Dioxin." Invited paper presented at the Dioxin Claims and Litigation Course, Executive Enterprises, Inc., Washington D.C., November 28, 1989.

"Forcing a Critical Perspective on Technology: The Role of Community Opposition to Facility Siting." Invited paper at the Second International Conference on Industrial & Organizational Crisis Management, New York University, November 4, 1989.

"Stigma and Hazardous Waste Siting" Invited paper presented at the conference Hazardous Waste '89: Strategies for Site Cleanup. Washington State University, Spokane, Washington, September 18, 1989.

"An Overview of Psychosocial Impact Issues from the CECOS Hazardous Waste Siting Hearings and Other Cases". Invited paper, American Psychological Association conference, New Orleans, Louisiana, August 12, 1989.

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"Psychosocial Impacts in Hazardous Waste Permit Hearings." Paper presented at the International Association for Impact Assessment, Montreal, Ca., June 27, 1989.

"A Longitudinal Study of Social and Environmental Impacts of the Extension of Route I-287 in Northern, New Jersey." Paper co- presented with Nadine Christopher, International Association for Impact Assessment, Montreal, Ca., June 25, 1989.

"The Psychological Basis for the "NIMBY Response," invited paper presented at the Fourth National Environmental Health Conference, Department of Health and Human Services, San Antonio, Texas, June 22, 1989.

"Psychosocial Issues in Hazardous Waste Siting," invited presentation," Polytechnic Institute of New York, May 3, 1989.

"Impacts on the Family from Toxic Exposure." Invited paper presented at the Conference of the American Orthopsychiatric Association, New York City, April 2, 1989.

"Image of Community and the New Jersey State Plan." Invited presentation to the Conference Bergen 2000, Paramus, N.J., January 26, 1989.

"Psychosocial Issues in the Perception of Radon Gas Exposure." Paper co-authored with Margaret Gibbs and Susan Belford presented at the EPA Radon Symposium, Denver Co., October 20, 1988.

"Results of the Orange Environment, Inc. Radon Testing Program." Paper co-authored with William Makofske presented at the EPA Radon Symposium, Denver, Co., October 20, 1988.

"Further Thoughts on a Theory of Environmental Stigma: Community Image in the Cases of Radon Gas Exposure." Invited paper presented at the American Sociological Association conference, Atlanta, Ga., August 26, 1989.

"Toxic Impact Assessment" Paper presented at the Conference of the International Association for Impact Assessment, Griffith University, Brisbane, Australia, July 7, 1988.

"The Need for an Ecopsychology: Recreating Ecological Balance," with Deborah A. Kleese. Paper presented at the conference "People's Needs/Planet Management: Paths to Co-existence." Environmental Design Research Association, Pomona, Ca., May 15, 1988.

"Ecology and Environmental Psychology," invited paper presented at the conference "People's Needs/Planet Management: Paths to Co- existence." Environmental Design Research Association, Pomona, Ca., May 12, 1988.

"Disaster Revisited: Bhopal and Chernobyl---What are the Lessons?" Master Lecture, Ramapo College of New Jersey, March 23, 1988.

"Radiation in the Home: Radon Gas." Invited paper presented at the First Global Radiation Victims Conference, New York City, September 29, 1987.

"A Framework for Examining Psychosocial Impacts of Toxic Exposure in LDC's." Paper presented at the International Workshop on Impact Assessment for International Development, Barbados, West Indies, June 1, 1987. Also served as invited resource person for the working session on toxic and hazardous wastes.

"Toward a Theory of Environmental Stigma," paper read for me by Linda Schneekloth at the Environmental Design Research Association, Ottawa, Canada, June 1, 1987.

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"Institutional Roles in the Development of a State Radon Response Program," invited paper presented to the Radon Forum sponsored by the Washington State Energy Extension Service, Spokane, Washington, May 6, 1987.

"Psychological impacts of radon gas exposure: preliminary findings," with Margaret Gibbs and Susan Belford, presented by Dr. Gibbs at the conference "Radon in the Environment," May, 1986, Ramapo College.

"Psychological consequences of radon in the home," with Margaret Gibbs and Susan Belford, presented by Dr. Gibbs at the Natural Hazards Research Center Workshop, Boulder, Co., July, 1986.

"Radon and the Home," invited paper presented at the annual conference of the Environmental Planning Lobby, Albany, September, 1986.

"Social and Psychological Impacts on the Community," invited presentation to the Hazardous Waste Conference sponsored by Vermonters Organized for Clean-up, Saturday, May 4, 1985.

"Person and the Environment: The Case of Toxic Exposure," paper presented at the Environmental Design Research Association, New York City, June 11, 1985.

"Evaluating Alternatives to Land Disposal--A Psychological Perspective," presented at the conference on Urban Impact Assessment, New York City, June 14, 1985.

"Psychosocial Impact Assessment of Residential Toxic Exposure -- An Overview," paper presented at the Conference of the International Association of Impact Assessment, Utrecht, The Netherlands, June 28, 1985.

"Social Impacts and Social Change: Some Initial Thoughts on the Emergence of a Toxic Victims Movement," paper presented at the conference of the International Association of Impact Assessment, New York City, May 25, 1984.

"Toxic Exposure and the Inversion of Home," paper presented at the International Conference on Environment and Action, Berlin, West Germany, July 28, 1984.

"Toxic Exposure: Field research and Expert testimony, invited paper presented at the Society for the Study of Social Problems, San Antonio, Texas, August 26, 1984.

"A Community Perspective on the Problem of Enforcement," invited paper presented at the conference Environment '84, Albany, New York, October 20, 1984.

"Perception of Health and other aspects of Quality of Life as a Function of Residential Exposure to Toxics," invited paper presented at the Environmental Defense Fund conference, "Toxics in Your Community," Silver Bay, New York, October 14-16, 1983.

"Key Findings and Methodological Issues in the Study of Communities Exposed to Toxic Pollution," paper presented at the Environmental Design research Association, College Park, Maryland, April, 1982.

"Social and Psychological Impacts Associated with Exposure to Toxic Chemicals via Drinking Water," paper presented at the conference, "Social Impact Assessment: The State of the Art," Vancouver, B.C., October, 1982.

"Analysis of Case Studies of the Relationship between Communities and Regulators," paper presented at the conference, "Social Impact Assessment: The State of the Art," Vancouver, B.C., October, 1982.

"Assessing Social Impacts as Part of the SEQR Review of Environmental Impact Statements," paper presented at the New York State Association of Conservation Commission conference "New Economics; New Environment?" in Saratoga Springs, New York, November 6-9, 1981.

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"Changing Energy-Related Values: A Suggested Process," paper presented at the Environmental Design Research Association, Charleston, South Carolina, March, 1980.

"The Role of Psychology in Interdisciplinary Environmental Thought," invited presentation, Bard College, Annondale-on- Hudson, 1980.

"The Person-Environment Relationship: Implications for Education," paper presented at the Environmental Design Research Association Conference, Buffalo, New York, June, 1979.

"Participatory Futurism: Ideology or Reality," paper presented at the Ramapo Center for Future Studies seminar, May 9, 1978.

"The Role of Environmental Design in Preparing for an Ecological Future," paper presented at the Environmental Design Research Association, Tuscan, Arizona, April, 1978.

"Lifestyle and the Prospect of Changing Patterns of Energy Use," paper presented at the Toward Tomorrow Fair, Amherst, Massachusetts, June 17, 1978.

"High School Aged in Bergen County," paper presented at the Environmental Psychologists of Northern New Jersey, Ramapo College, May 13, 1978.

"Chinese History and Lifestyle as a Context for Shadow Theater," paper presented at the Seminar on Chinese Shadow Theater, July 8, 1978.

"Participatory Futurism: Merging the Evolution of the Future with the Process of the Present," invited paper presented at the Conference on the Conditions of the Future and Their Implications for Education, Technical University, Berlin, Germany, November 23-26, 1978.

"Traffic and Residential Quality," Paper presented at the conference, Environmental Psychologists of Northern New Jersey, Ramapo College, spring, 1976.

"Dispositional and Situational Components of Privacy Preference," paper presented at Environmental Psychologists of Northern New Jersey, Ramapo College, spring, 1977.

"Designing the Future: Toward a Participatory Society," paper presented at the Toward Tomorrow Fair, University of Massachusetts, June, 1977.

"Toward an Equilibrium Society," paper co-presented with William Makofske, Ph.D., at the Toward Tomorrow Fair, University of Massachusetts, June, 1977.

"The Complexities of Cultural Survival: Considerations on the Perpetuation of Traditional Chinese Shadow Theater," paper presented to the Forum of Ideas Lecture Series, Ramapo College, September, 1977.

**Other Academic Presentations:**

"Sustainability in Orange County." Presentation to Leadership Orange, December 7, 2017.

"Sustainability in the Mid-Hudson." Presentation to the Museum of the Hudson Highlands. November 20, 2007.

"The Most Contaminated Place on Earth," Culture Club Presentation, Ramapo College.

"The Sustainable Campus." Presentation with Bill Makofske to the Institute for Environmental Studies, 2003

"Lessons from Russia." Presentation to the Institute for Environmental Studies, March, 2000.

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"Reflections on the Adams Center Hazardous Landfill," Cable Access Conference Presentation on Live Television at Indiana University-Purdue University Fort Wayne as part of the series on "Trash TV," with Caron Chess from Rutgers University, May 23, 1994.

"Water as a Driving Environmental Concern," keynote address, Earth Day Celebration, Orange County Community College, April 21, 1991.

"Geothermal Energy and Native Hawaiian Values." Presentation before the Institute for Environmental Studies, Ramapo College of New Jersey, December 5, 1990.

"Pele versus Geothermal Energy," Earth Day Presentation at Ramapo College, April 19, 1990.

"Global Environmental Problems as a Force for Thinking About One Earth," talk to the International House, Ramapo College, April 19, 1990.

Workshop rapporteur, Technology and Global Sustainability Workshop, Center for Technology Studies, New Jersey Institute of Technology, January 8-12, 1990. Gave daily integrative wrap-ups of conference.

Discussant, workshop Teaching Environmental Psychology: Textbooks, Topics and Techniques. American Psychological Association conference, New Orleans, Louisiana, August 12, 1989.

Invited participant of the Social Science Work Group, Workshop on Evaluating Risks to Human Health Associated with Exposure to Toxic Chemicals in the Great Lakes Basin Ecosystem, Great Lakes Program, Niagara-on-the-Lake, Ontario, April 19, 1989. Co-authored workgroup report.

Discussant, two Master Lectures on AIDS, Ramapo College, fall, 1989.

Discussant, master lecture programs on Appropriate Technology, Population Growth, Medicine and World Health, World Energy Trends and The Year 2000, Ramapo College of New Jersey, spring, 1985.

Guest on Ramapo Roundtable Television Programs addressing global toxic contamination, world energy trends and the Global 2000 Report, spring 1988.

Resource person and facilitator, working group on toxic and hazardous wastes. International Workshop on Impact Assessment for International Development, Barbados, West Indies, June 1987.

Guest, Ramapo Roundtable, New Jersey Network Television program on environmental perception, spring, 1987.

Guest, Ramapo Roundtable, two New Jersey Network Television programs on opposition to siting radium-contaminated soil, fall, 1986.

Discussant, advocacy and research, panel at the Environmental Design Research Association Conference, Atlanta, Georgia, April, 1986.

Guest lecturer, Johnson State College, Johnson, Vermont, April 28, 1986.

Discussant, session on Perception of Radon Risk at the conference "Radon in the Environment," May, 1986, Ramapo College.

Invited Participant, workshop on family stress, National Conference, Citizens Clearinghouse for Hazardous Wastes, Arlington, Va., May, 1986.

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Discussant, program on Human Rights and the Environment, Master Lecture Series, Ramapo College, April 24, 1985.

Session introduction, "Social Impact Assessment and the New York State Environmental Quality Review Act," conference on Urban Impact Assessment, New York City, June 14, 1985.

Discussant, two Master Lecture programs on the Dilemmas of Technology, Ramapo College, fall, 1985.

"PsychoSocial Impacts of a High Level Nuclear Waste Site," Presentation of research plan, Scoping Conference on the Social and Economic Impacts of a High Level Nuclear Waste Repository in the Richton Dome, Perry County, Mississippi; Jackson, Mississippi, October 11, 1985.

Guest, Ramapo Roundtable, New Jersey Network Television program on social impacts of toxic exposure, fall, 1985.

Guest, Ramapo Roundtable, New Jersey Network Television program on radon gas exposure, fall, 1985.

"Responding to Technological Hazards," workshop co-presented with Margaret Gibbs, Ph.D. at the Environmental Design Research Association Conference, San Luis Obispo, Ca., July 2, 1984.

Discussant, program on Environmental Law, Ramapo College, October 17, 1984.

Session leader for "Arousing Citizen Involvement" for conference "Citizen Training Workshop on Toxic Wastewater Controls in the Hudson Valley," Bear Mountain, New York, January 16, 1982.

Opening presentation for "A Citizen Workshop on Toxic Industrial Wastewater Control in Northern New Jersey," Ramapo College, May 8, 1982.

Discussant, session on Participatory Design and Handicapped Housing, Environmental Design Research Association, Charleston, South Carolina, March, 1980.

"Energy and Society," program co-presented with Joel Kameron, Ph.D. Summer Semester Television Series, summer, 1979.

"Authoritarianism and Democratization: A Case Study of Ramapo College," Master Lecture presentation, Ramapo College, spring, 1979.

"The Difficulty of Getting Specific," paper presented as part of the Master Lecture Series, Ramapo College, November, 1977.

#### **Conference Leadership:**

Organized and ran conference: "Fukushima and the Human Consequences of Nuclear Disaster." Ramapo College of New Jersey, February 17, 2017.

Developed, organized and ran the series "Creating a Sustainable World: Voices of Expert Practitioners." Spring 2017 with seven programs featuring Chuck Stead, Harriet Shugarman, Leigh Merinoff, Paul Rosoie, Hunter Lovins and John and Ramsay Adams.

Developed, organized and ran the series "Creating a Sustainable World: Voices of Expert Practitioners." Spring 2016 with seven programs featuring Bob Willard, Gary Openheimer, Janet Biehl, Kyle Tafuri, Tracy Hall, Tracy Mann and production of a climate conference.

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Developed, organized and ran the Healthy and Sustainable Living MOOC 2015 from September 6 through 28, featuring four keynote events with Michael Edelstein, Felix Dodds, Kosha Joubert and Hazel Henderson and four panels featuring 24 global participants.

Developed, organized and running the series "Creating a Sustainable World: Voices of Expert Practitioners." Spring 2015 with eight programs by Thilmeeza Hussain, Andrew Faust, Trent Schroyer, Eric Fuchs-Stengel, Natalia Mironova, Paul Rosolie and the first preview of the film American Native, featuring a panel of discussants headed by Dr. Elizabeth Hoover. A conference on gas pipeline impacts was also produced.

Developed, organized and running the series "Creating a Sustainable World: voices of Expert Practitioners." Spring 2013 with seven programs, by Helen Ross, Harris Gleckman, Shebazz Jackson and Josephine Popagni, Jamie Cloud, Michael Klemens, Kevin Lyons and Liz Walker.

Developed and organized one day conference "Igniting New Jersey Climate Action." Ramapo College of N.J., Mahwah, N.J., April 13, 2012.

Developed, organized and running the series "Creating a Sustainable World: voices of Expert Practitioners." Spring 2012, a series of six major programs on sustainability, Ramapo College of New Jersey. Featured speakers were Carla Sunshine Koppel, Michael Klemens, Fred Kirschenmann, Nora Bateson, Neil Seldman and Anthony Cortese.

Developed, organized and ran the conference "Exchanging Lessons of the Aral Sea Disaster," Ramapo College of New Jersey, Mahwah, N.J., October 27, 2011 as part of the grant by that name funded by the Trust for Mutual Understanding.

Developed, organized and ran the conference "A Climate for Change" and the event "Green Meets Green" which also included a major exposition of green products and services. November 30 and December 1, 2007. The event was funded by the New Jersey Board of Public Utilities. The focus was the sudden mainstreaming of green given the public acceptance of the climate crisis and the need to frame that crisis as part of the overall effort to achieve a sustainable society.

Environmental Justice after Katrina. Two day conference coinciding with the conference of African American Professorate and Earth Day 2006. Ramapo College of New Jersey.

Organized with Stephen Couch the session "Blowback and the World Trade Center Disaster." Society for the Study of Social Problems, Philadelphia, August 14, 2005.

Organized the session "Environmental Pollution and Cultural Pollution: Impacts to Native Peoples Due to the Contamination of Place." Environmental Design Association, Albuquerque, New Mexico, June 3, 2004

Organized the session "Informing Environmental Decision Making: Environmental Impact Assessment in Russia and the United States" at the Association for Research on Nonprofit Organizations and Voluntary Action," November 16-18, 2000. New Orleans, Lo.

Co-Organized and co-chaired the Fourth Mid-Atlantic Environmental Conference, April 23-25, 1998. Chaired the Session on Global Climate Change and Energy, Transportation and Planning.

Co-organized and co-chaired the Third Mid-Atlantic Environmental Conference, "What Works for Sustainable Communities." April 12-14, Ramapo College of New Jersey. Chaired the session on "Exemplary Models of Ecological Literacy"

Organized the session "Contamination of Place," Environmental Design Research Association, Salt Lake City, Utah, June 14, 1996.

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Co-organized and co-chaired the Second Mid-Atlantic Environmental Conference, "Starting Sustainability." April 12-14, Ramapo College of New Jersey. Chaired the session on "Is the Proposed Sterling Forest Community a Sustainable Community?"

Co-organized and co-chaired the First Mid-Atlantic Environmental Conference, "A Time of Challenge." April 7-9, Ramapo College of New Jersey. Chaired the session on Ecological Literacy.

Co-organized and co-chaired sessions on Energy and Environment and on Emerging Coalitions on Environmental Issues, Environmental Design Research Association, Boulder, Colorado, April, 1992.

Co-Organized and Co-Chaired conference for decision makers on the Dutchess Quarry Cave Archeological Site, Orange County Community College, September 17, 1991.

Organized and chaired session entitled "Assessing Impacts on Indigenous Peoples" at the International Association for Impact Assessment, Champaign-Urbana, Ill., June 10, 1991.

Organized and chaired session, "Psychosocial Impacts from Hazardous Waste Siting: Moving Beyond NIMBY." Conference: "Hazardous Materials/Wastes: Social Aspects of Facility Planning and Management", Toronto, Canada, October 3, 1990.

Organized and chaired symposium "Critical Issue---Defining Psychological Impacts in the Judicial Review of Toxic Hazards", American Psychological Association conference, New Orleans, Louisiana, August 1989.

Organized and chaired session "Toxic Impact Assessment" for the International Association for Impact Assessment conference, Montreal, Ca., June 1989.

Organized and chaired session "Toxic Impact Assessment" for the International Association for Impact Assessment conference, Brisbane, Australia, July 1988.

Co-organized and co-chaired a major three-day conference, "Radon and the Environment." Ramapo College of N.J., May, 1986.

Organized and chaired session on "Social Impact Assessment and the New York State Environmental Quality Review Act," at the conference on Urban Impact Assessment, June, 1985.

Organized and chaired Session on "Environmental Design and Ecological Consciousness --are they Compatible?" Environmental Design Research Association, New York City, June, 1985.

Organized and chaired session on "Social and Psychological Impacts of Toxic Exposure: Toward Theory and Action," International Association for Impact Assessment, Utrecht, the Netherlands, June 28, 1985.

Organized and chaired workshop "Responding to Technological Hazards," Environmental Design Research Association, San Luis Obispo, Ca. July 2, 1984.

Co-organized and chaired conference on "Toxics and Community," Orange County Community College, September 18, 1984.

Organized and chaired session on "Key Findings and Methodological Issues in the Study of Communities Exposed to Toxic Pollution," at the Environmental Design Research Association, College Park, Maryland, April 17-20, 1982.

Co-organized conference, "A Citizen Workshop on Toxic Industrial Wastewater Control in Northern New Jersey," Ramapo College, May 8, 1982.

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Organized and Chaired sessions on "Protecting Communities from Regulators" and "The Social Impact Assessment of Toxic and Hazardous Materials," at the conference "Social Impact Assessment: The State of the Art," Vancouver, B.C., October, 1982.

Organized and chaired sessions on "Community Action in the Solution of Toxic Problems" and "Love Canal: A Case Study in the Health and Social Impacts of Toxics on a Community," during conference on The Social Dimensions of the Toxic Waste Problem, Ramapo College, April 3-4, 1981.

Organized and chaired conference "The Karst Topography of Southern Orange County," Goshen, New York, October 5, 1981.

Co-Chaired (with Min Kantrowitz) session on "Energy and Behavior," Environmental Design Research Association, Charleston, South Carolina, March 2-6, 1980.

Chaired Session on "Lifestyle and Conservation," Social Dimensions of Energy Options conference at Ramapo College, March 31-April 1, 1979. Conference co-organizer.

Session Chair, Environmental Design Research Association, Tucson, Arizona, April, 1978.

Organized and chaired conferences, Environmental Psychologists of Northern New Jersey, spring, 1976; spring and fall, 1977 and spring, 1978, Ramapo College.

#### ACADEMIC ADMINISTRATION

##### **Program Administration and Curriculum Development:**

Director, Institute for Environmental Studies, 2005 continuing; Convener, Environmental Studies Program, 1997-2009, 2015-18; Convening group member for Masters in Sustainability Studies, 2010-continuing; Curriculum Committee for Masters in Sustainability Studies 2007-2008 (co-developed program for college and state review); Prepared five year review of Environmental Studies program, 2004-5; Prepared new program brochure, 2005; Prepared program website, 2005; Project Director, Trust for Mutual Understanding Grants, 2002-2003 and 1999-2001. Prepared draft application to Phi Beta Kappa for Ramapo chapter, 2000. Prepared the Successful Submission to the Templeton Foundation on Career Development, 1999. Project Director, New Jersey Higher Education Partnership for Sustainability, 1999; wrote Five-Year Review and coordinated outside evaluation, June 1998 and facilitated program revision. Project Director of Ecological Literacy Project, 1994-8; liaison in evolving program efforts with Frost Valley YMCA, 1995-6; leader of effort to develop a Masters in Sustainability Studies, 1996-9; negotiator for effort to develop joint masters program with NJIT, 1990-1994; Convener, Environmental Studies Program, 1986-1992; prepared 5-year review, 1992; guided Environmental Program through outside review, 1988-89; facilitated major revisions of the ES majors, 1988-89; negotiated letter of commitment for ES, 1988-present; Associate of the Institute for Environmental Studies, 1985- present; Feasibility study for articulation agreements for environmental programs and community colleges, 1986; various articulation and program coordination negotiations, 1980-present; exploring intra-and inter-campus options for environmental graduate programs, 1989-present; Assistant Director, School of Environmental Studies, 1982-4; preparation for program evaluation, 1982; chaired space planning committee, 1980-81; Chair of School of Environmental Studies Curriculum Committee, 1976-77 and 1980-82; various recruiting events, 1979-current; designed program brochure (1980-1), and catalogue copy, 1982, 1985, 1988, 1991, 1999.

##### **Campus Governance Activities:**

Member, PCCS (President's Campus Committee for Sustainability) 2015 and continuing. Member/advisor to campus climate committees, 2008; Chair, Sustainable Buildings and Grounds Committee: 2003-2007; Member of the Interdisciplinary Pillar group, 2007; Member of the Academic Structure Exploratory Committee: 2004; Member/Chair of the Course Load Adjustment working groups (CLA I and II), 2003; Member of the Sustainability Center Planning Committee, 2001-2010. College Seminar Committee, 2001; Member, Middle States Community Relations Committee, 1999; Member, General Education Committee, 1993-95. Head, College Mission Committee, 1992; Founder, Council of Conveners, 1990; Academic

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Committee, 1985-6; Led opposition to 4/3 credit shift, 1984; to strong Deans and to restricting collaboration across schools, 2003-2004; Master Planning Committees, 1982-4; contributions to Commission on Long Range Planning, 1977 and President's Commission, 1978; member of Faculty Assembly, 1975-6.

#### **Personnel Activities:**

Numerous Career Development committees. Chaired hiring committee for new faculty member in Environmental Studies, spring 2009; SSHS Promotions Committee member, 2007; Chaired hiring committee for Sustainability Educator Position, 2003; Chaired All-College Promotions Committee, 2003 and 1976; School of Social Science and Human Services Personnel Committee, 2002-3, 1985-1998; Chair, 1989 to 1991. Environmental Science search committee, 1998. Chaired search for faculty line, spring 1992. Chaired Unit Career Development Committees, School of Environmental Studies, 1982-4; School of Environmental Studies Personnel Committee, 1975; Dean's Search Committee, 1975.

#### **Student Development Activities:**

Organized Environmental reunions 2016, Fall 2015, Spring 2015, 2014. Spring lecture series 2012-2014. Adviser to the Environmental Alliance, 1995-2010; organized campus climate activities 2007-2008. Supervised student involvement in Green-Meets-Green conference and expo, 2007. Project work under the Sustainable Campus plan project, 2003. Project work under the Greening the Village project, ranging from recycling to landscaping, 2002 and continuing. Project work under the Environmental Literacy Project included various projects relating to the Alternative Energy Center, the College Seminar, Earth Day and the Mid-Atlantic Environmental Conference, 1994-8. Conservation Week Address, March 15, 1992; College Seminar Core Group, 1987-91. Organized numerous advisement programs for environmental students, 1980 to present; organizer "joint environmental tutorial program," 1980-2, Faculty tutor, supervised peer tutorial program, principal environmental freshman advisor, 1980-3 and principal environmental sophomore advisor, 1981-3; organized environmental graduation party, 1979; co-organized Tenth Year Celebration, 1981; designed and initiated self-help group for graduating seniors, 1992, 1980; advisor to Van Horne House---the Environmental House---1981-2; also numerous activities at the Alternative Energy Center, Earth Day events and other programs. Pine Hall Committee, 1987; chaired Student Services Faculty Liaison Committee, 1977-80; co-created first Ramapo student orientation program, 1977-78; co-planned and ran first two orientation programs, 1978 and 1979; initiated Student Leadership Training Program, 1979; Campus Housing Committee member, 1979-80; advisor to Human Relations Club, 1978-82; trainer for twice-yearly Human Relations Programs, 1976-82; advisor to publication Alternative Foundations, 1979; project adviser to PIRG, 1981; advisor to Earth Day, 1984, etc.; advisor to Food Cooperative 1985-1990; ran workshops for Drop-in-Center, 1974, Alternative Energy Center, 1976 and Resident Assistants, 1985.

#### **Campus Development Activities:**

Fund raising chair, member of design team and project director for the Ramapo College Sustainability Education Center project, 2002-2003 and continuing; Chair of new project review for the Sustainable Buildings and Grounds Committee, 2003-2004; Sustainability Center Design and Development, 2001; Co-Chair and co-founder of Health and Safety Committee (since 1985) and Campus Sustainability Team (1998-2001). Critique of the Barrie Center location, 1995. Guided campus response to I-287 project bisecting campus, 1987-1996; work on noise abatement requirements led to NJDOT decision to erect multi-million noise barrier along Ramapo campus; Instigated review of fire/ emergency procedures, 1989 to 2000; Campus Development Committee, 1985-8; planning input through class activities for Art Gallery, 1985, new Day Care Center, 1984, The Lodge, 1977 and Pine Hall, 1979- 80; Faculty representative on the New Dormitory Planning Committee, 1980; supervised class-based participatory design and construction of Day Care Playground, 1978. Core faculty, Alternative Energy Center, 1974-2000.

#### **Faculty Development Activities:**

Chaired team for Green Meets Green event November 2007. Project director for the Environmental Literacy Project; work with faculty from the College Seminar Program, the College English faculty, the Basic Math faculty, the History faculty, etc. 1994-8. Founder and active participant Center for Future Studies, 1976-81 and Institute for Environmental Studies, 1985-present; organized conferences on Energy, 1979, Water, 1980, Toxics, 1981, Energy, 1983 and Radon Gas, 1986; First Mid-Atlantic Environmental Conference 1995, Second Mid-Atlantic Environmental Conference, 1996; third Mid-Atlantic Environmental Conference, 1997; fourth

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Mid-Atlantic Environmental Conference, 1998. Green Meets Green Conference and Expo, 2007; Environmental Justice, 2008; Lessons of the Aral Sea, 2011; Environmental Institute Speakers Series 2010-2012; MASS Expert Practitioner Speaker Series, 2012-2013. "Igniting New Jersey Climate Action," 2012.

Participation in scores of Master Lectures and Ramapo television programs and faculty discussion forums.

**Bargaining Unit Activities:**

Grievance consulting, 2001. Organized and chaired or co-chaired campus Health and Safety Committee, 1985-2003; Officer Ramapo AFT: President, 1983-4, Secretary, 1975-6 and Vice President, 1976-9; conducted review of personnel procedures, drafted proposed revisions and co-negotiated Faculty Handbook, 1976-8; local negotiating committee, 1984-87; Founded and Edited Raft Newsletter, 1974-79.

**COURSES TAUGHT SINCE 1983**

**100 Level:**

Environmental Studies (20x); College Seminar (8x)

**200 Level:**

Social Ecology (x3); Technological Mythologies (1x); World Sustainability (30x).

**300 Level:**

Environmental Psychology (44x); Psychology of Social Process (2x); Sustainable Communities (20x)

**400 Level:**

Environmental Assessment, lecture/field research (32x); Environmental Justice in a Contaminated World (Seminar) (2x); Practicum in Environmental Education (2x); Environmental Seminar (9x) (topics—Sustainable Organizations, Community Sustainability, Radon Gas, River Profiling, Citizen Participation and Environmental Regulation, Towards an Ecological Society, Ecological Literacy, Environmental Justice); Senior Seminar on Environmental Justice (2x); Senior Seminar: Impact of Technology (4x); Psychology Seminar: Community and Environment (1x).

Note: In summer 2009, a study abroad version of Environmental Psychology was offered for a month in Venice, Italy.

**Graduate:**

MASS (Masters in Sustainability Studies): Foundations of Organizational and Social Process: Social Change for Sustainability. Fall 2010, Sustainability Studio Fall 2015, 2012, 2011; Expert Practitioner Series, Spring 2012, 2013, 2014, 2016, 2017; Sustainability Theory 2014, 2015, 2016, 2017; Research Methods 2015, 2016, 2017. Project preparation 2016, 2017.

Masters in Educational Technology: Community and Environment: Education for Citizenry, 2000, 2001 and 2003.

Dissertation Committee Memberships in Progress:

Anett Sasvari, Uppsala University, Sweden; 2011-continuing;

Pasang Dolma Sherpa, Katmandu University, Nepal, 2014 and continuing; named outside reader 2018.

Served on the Dissertation Committee for Alejandra Bozzolosco, Montclair University, 2011-2017.

Served on the Dissertation Committee for Walter (Chuck) Stead, Antioch NE, 2011-2014.

Consulted on the dissertation of Susan Olson, Walden University, 2017

Served on the dissertation Committee for Francesca Scafuta, University of Naples, Italy, 2010-2012

Served on the Dissertation Committee for Susan Maret, Union Graduate School, 1999-2002.

Outside reader for thesis of Ina Bassarabia, Volgograd State Pedagogical University, 1999.

Served on dissertation committee for Tara McGee, Ph.D., Australian National University, 1995-1996.

Served on dissertation committee for James Stappleton, Ph.D., Union Graduate School, 1984-6.

**COMMUNITY WORK**

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## POLITICAL WORK

Democratic Candidate for County Executive, 2005, Orange County New York. Ran on sustainability platform. Earned 40% of vote.

## ENVIRONMENTAL WORK

### Principal Organizational Roles (partial):

Founder and President of the Board, Orange Environment, Inc., a not-for-profit, tax-exempt organization, 1982-present; OEI's mission is to promote sustainability and the integrity of the communities and region of Orange County, N.Y. Activities include development of permaculture training program, 2012-15, principle focus on new Solid Waste Management Plan for Orange County, 2010-12; cumulative impact assessment training for Orange County Planning Department and numerous SEQR workshops, continuing. Yearly training on sustainability for Leadership Orange, 2000 and 2011. Challenge to Mohawk casino impact assessment contributed to project withdrawal, 2007-8. Successfully litigated clean water violations, Wallkill STP 2005. Organized and conducted planning workshops for the new Orange County plan, 2003 and wrote green paper on a Sustainable Orange County. Collaborated with Middletown, N.Y. on RFP that led to Pencor-Masada waste to ethanol project. Plaintiff in several environmental law suits, including Orange Environment, Inc. v Orange County (re Orange County Landfill violations of the Clean Water Act and Resource Conservation and Recovery Act, 1992-1999. Settlement negotiated in 1999 created, among other benefits, a \$750,000 fund for the Wallkill River) and (re Harriman Sewer Treatment Plant violations of the CWA, 1997-8; settlement required corrective procedures). Intervener, in adjudicatory hearings over the proposed Expansion of Al Turi landfill, 1998-9 (prevailed leading to closure of facility); Orange County Landfill Expansion, 1987-8 (prevailed); the Orange County Water Loop Project, 1990 (led to project cancellation); the renewal permit for Revere Smelting, Inc., 1995 (won innovative public oversight process); Sterling Forest Development Corporation, 1995 (helped force Sterling forest Corporation to sell land for new state park). Negotiated landfill permit for Orange County Landfill that set important precedents for compensation of communities and residents adversely impacted by the facility; founder and participant in "OCSLP" (Orange County Sanitary Landfill Parties of Interest), 1984-6, 1989-1992; founder of the Wallkill/RSR CAC, 1994. Member, Town of Goshen Environmental Review Board, 1979 to 1988; Founder and President, Goshen Area Resources Association, 1980-84; Organizer, Wallkill Valley Land Conservancy, 1982-4 (now merged into the Orange County Land Trust).

### Other Organizational Roles:

Advisor to the Village Mayor, Goshen, NY, 2007; Member of the Water Planning Committee of the Orange County Department of Planning, 2003; Member of the Mayor's Advisory Committee on Port Development, Newburgh, New York, 1997-8. Co-developed Fall 1996 Community Discussion Course on Discovering the Landscape, Goshen Library; Collaboration in running a community training program on Natural Resource Inventory Studies, Winter, 1980; design workshop for play facility for Project Head start, Paterson, N.J., July, 1978; co-organizer, session leader and evaluator for the Warwick Town Meeting, June, 1976; facilitator of community communications project in Wyckoff, N.J. in 1975; Member, Mid-Hudson Community Development Committee, 1978-80; founder, County Liaison for Environment and Resources (CLEAR), 1981, member of the Goshen Environmental Review Board, 1978-1988.

### Community Talks (sample):

Impacts of Fracking, Universalist Church, 2010; Orange County Community College, Commentary on the play "An Enemy of the People" 2006; Orange County Community College, February 2000. Orange County Earth Day High School Program, April 1999 and 1998; Leadership Orange Speaker 2007, 2006, 2003, 2002, 2001, 2000, 1999, 1998 and 1997; address to Goshen High School merit scholars, 1998; "The Historical Context of the Pencor/Masada Proposal," talk presented April 19, 1997 at Orange County Community College; Panel presentation to the Orange Leadership Conference, April 11, 1997; Keynote Address, Stewart Reserve Coalition Annual Dinner, May 8, 1995; Invited Address, Cornwall High School, May 8, 1992; Wetlands Forum, March, 1992; Goshen Intermediate School, March 1992; Orange County Chamber of Commerce, February 1992; Community Relations Council, Jewish Federation of Greater Orange County, October 20, 1991; Walden

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Day, Walden, New York, August 17, 1991. Goshen High School, May 16, 1990; February 12, 1991; Orange County Earth Day Celebration, April 20, 21, 22, 1990; April 20, 21, 1991; Warwick Middle School, February 9, 1990; League of Women Voters Forum on Recycling, September 28, 1989; Middletown Interfaith Council, September 24, 1989; Toward an Environmental Agenda for Orange County, October, 1989; Opening address, First Annual Mastodonathon, July, 1989; Sugar Loaf Community Foundation, June 1989; Scholars Tradesman Bookstore, April 1989; Ramapo Valley Rotary, May 19, 1989; Wawayanda Homeowners Association, October 1988; Unitarian Society, October 9, 1988 and January 16, 1987; St. Anthony's Hospital Health Fair, April, 1986; the Greater Middletown Citizen's Council, March 17, 1983; Middletown High School, June 2, 1981.

**Pro Bono Testimony at Legislative Hearings (Partial):**

Testimony on Taylor Recycling Gasification Plant, 2013; Testimony on Wallkill flooding at two public hearings, 2007-8. Testimony on NYRI project, 2007. Testimony on casino development on five occasions, 2005-2007; Scoping testimony on proposed Superior/Hudson Valley Landfill, September, 2000; Testimony against proposed expansion of Al Turi Landfill, Inc., October, 1998; Testimony on Proposed Orange County Jail, June 1996. Testimony on Turi Landfill Superfund Site, May 1996. Testimony on the proposed development of Sterling Forest, June, 1995. Testimony on Superfund Reauthorization, submitted to Senator Frank Lautenberg October 1993. New York State Assembly Environmental Conservation Committee, Wallkill, N.Y., March 20, 1992, hearings on State Superfund Program. Testimony before the Federal Aviation Administration regarding airplane noise, Newburgh N.Y., December 5, 1991. U.S. Army Corps of Engineers, hearings under the Clean Water Act on the Application of the Orange County Water Authority, Pine Bush, N.Y., September 12, 1991. Orange County Water Authority, hearings on the taking of land by eminent domain for the Orange County Water Loop, Goshen, N.Y. August 13, 1991. New York Department of Environmental Conservation, hearings on the proposed Orange County Water Authority project, Pine Bush and Goshen, N.Y., March, 1991. New York Department of Transportation, hearings on the Draft Environmental Impact Statement for Development of the Stewart Airport Property, Newburgh, N.Y., November 28, 1990. New York State Senate Minority Committee on Indoor Air Pollution, Monroe, N.Y., October 11, 1990. Orange County Legislature, hearings on the Draft Solid Waste Plan, October 10, 1990. New York State Greenway Commission, West Point, N.Y., September 18, 1990. New York State Minority Committee on Solid Waste, Goshen, N.Y., August 27, 1990. Health monitoring of Revere Smelting and Refining (RSR) of Wallkill, N.Y., before the New York State Department of Environmental Conservation, December 18, 1989. Orange County Scoping Hearing on the Generic Solid Waste Plan; November 21, 1989. New York State Greenway Commission, Newburgh, New York, November 17, 1989. Turi Landfill Expansion Scoping Hearing on the Draft Environmental Impact Statement, before New York State Department of Environmental Conservation, November 15, 1989. "Illegal Disposal of Wastes in the Hudson Valley." Testimony presented to the Environmental Conservation Committee, New York State Assembly, September 21, 1989, Tuxedo, New York. New York Senate Minority Committee on Radon, Newburgh, New York, March 2, 1989 and in New York City, November 22, 1988. Orange County recycling program, 1988. Social Impacts of electrical transmission lines, before U.S. Army Corps of Engineers, April 2, 1985. Alternative Landfill Siting Plan, Orange County Legislature, October 2, 1985. Participation on the board receiving testimony on Superfund effectiveness for the New Jersey Grass Roots Organization, Sayerville, New Jersey, April 28, 1984. "A Psychological Perspective on Community Health Information on Toxic Sites," testimony before the New York State Assembly Committees on Health and Environmental Conservation, New York City, May 4, 1984. "A Community Perspective on Organized Crime Involvement in Waste Disposal," testimony before the New York State Assembly Committee on Environmental Conservation, September 21, 1984. New York State Assembly Committee on Environment and Conservation, April 14, 1983. Draft Environmental Impact Statement on the sale of Glenmere Lake before the Orange County Department of Planning in January and May 1982.

**Media:**

Scores of newspaper articles and op-ed pieces; hundreds of media interviews with local, national and international press (print, radio, television).

GRANTS, SUPPORT AND AWARDS

**Grants:**

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"Study tour of the Peruvian Amazon with Paul Rosolie, Tamandue Expeditions. July 2017. Funded by the South American Initiative, Ramapo College of NJ.



"Exchanging Lessons of the Aral Sea Disaster," 2010-2011. Grant received from the Trust for Mutual Understanding. Project Director.

Fulbright Visiting Scholar Grant to bring Abror Gadaev to Ramapo for academic year, 2009.

Project Director, N.J. Board of Public Utilities Grant to Ramapo College, "Renewable Energy and Green Design." 2007-2008.

"Empowering Russian and American NGO's to Address Issues of Future Sustainability." 2002-2004. Grant received from the Trust for Mutual Understanding. Project Director.

"Greening the Village," 2001-2002, grant from the Ramapo College Foundation, Project Director.

"Informing Environmental Decision-making: Environmental Impact Assessment in Russia and the U.S." 1999-2000. Grant received from the Trust for Mutual Understanding. Project Director.

"New Jersey Higher Education Partnership for Sustainability." Project funded by the Geraldine Dodge Foundation, spring 1999. Project Director.

Fulbright Visiting Scholar Grant to bring Maria Tysiachniouk to campus, 1999.

"Environmental Literacy and the Undergraduate Curriculum." Grant received from the Fund for the Improvement of Post-Secondary Education (FIPSE) for 1994-8. Project Director.

Fellow, Center for Technology Studies, New Jersey Institute of Technology, fall 1989, 3 credits release time.

"New Jersey Ozone Notification Program Evaluation." Project funded by the New Jersey Department of Health. Principal investigator. 1988-89.

Travel grants from the Trust for Mutual Understanding, 1998; World Bank, 1988; The Netherlands, 1985; West Berlin, 1978.

Grants received by Orange Environment include \$60,000 for the Wallkill River Action Plan (New York State, Orange County and the Kaplan Fund), and a \$5,000 New York State grant for radon programming.

**Institutional Support:**

Meadowlands Fellowship: 2006, 2007.

Separately Budgeted/Faculty Development Research Grants from Ramapo College: 2015, 2014, 2008; 2001; 1990-1, 1989-90, 1988-89, 1987-88, 1986-87, 1985-86, 1984-85, 1982-83, 1981-82. Career Development grant, spring 1995.

Ramapo College Foundation grants for development of Upstream/Downstream Curriculum 2015, research on radon gas exposure, 1986 and 1987, for student travel to the International Association for Impact Assessment conference in 1989, for the First and Second Mid-Atlantic Environmental Conferences, 1995 and 1996, for the San Xavier Research Project, 1996, for travel, 1998 and for speakers for the Green Meets Green event, 2007.

Sabbatical Leaves, fall, 1984, 1991-2, 2001, fall 2009.

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Schomburg Grants to bring Vernice Miller (1999), Robert Bullard (2008) and Elizabeth Hoover (2014) to campus.



### **Special Recognition and Awards**

Emerald Publishing Journal Submission Award for 2011 for best journal article for "Privacy and Secrecy: Public Reserve as a Frame for Examining the BP Gulf Oil Disaster."

Florence Thomas' Award, Ramapo College, 2005.

Recognition for special service to Ramapo College for blocking the Truck Weigh Station Project, October 2000.

Special recognition for service to the college, Ramapo College of New Jersey, spring, 1999.

Granted Certificate of Environmental Leadership and Named to Environmental Grassroots Hall of Fame by the Citizen's Clearinghouse for Hazardous Wastes, May 16 1993.

Faculty Advisor to students winning first prize for the Environmental Expo awards contest, 1989 and 1987; runner up, 1988, 1990.

"Faculty Advisor 1989," Environmental Management Competition, Environmental Expo Advisory Board and the New Jersey Department of Environmental Protection.

"Faculty Advisor 1987," Environmental Management Competition, Environmental Expo Advisory Board and the New Jersey Department of Environmental Protection.

American Institute of Architects Research Award [To Bosti, Inc. for Pak (Planning Aid Kit) Project], 1973.

Herbert A. Lehman Fellowship, 1970-74.

Coro Foundation Fellowship, 1970.

Stanton Chapman Crawford Award (University of Pittsburgh).

Phi Beta Kappa, Phi Theta Kappa, Phi Eta Sigma and Chi Lambda Tau (University of Pittsburgh).

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