

VOLUNTARY VISITORS' (VOLVIS) LEADERSHIP PROGRAM

14 - 24 April 2009

Science Journalism Education

A Curriculum Project for South Africa, Namibia and Uganda

1. PREAMBLE

This report provides details of a Study and information-gathering tour - through the U.S. Department of State's Bureau of Educational and Cultural Affairs - of esteemed American universities and media institutions by three journalism educators from Africa. The purpose of the tour was to consult and network with media experts, academics and journalists in order to gain insight into and collect material which would serve to inform an African-oriented curriculum in Science Journalism.

The three academics who undertook the tour are Dr. Pedro Diederichs, Head of the Journalism Department at Tshwane University of Technology in Pretoria, South Africa, Ms Emily Brown, Head of the Media Technology Department at the Polytechnic of Namibia in Windhoek, Namibia, and Dr. George Lugulambi, Head of the Journalism Department at Makerere University in Kampala, Uganda.

Ms Janet Donaghy, Program Officer in the Voluntary Visitors' Division in the U.S. Ms Sheila Malan, Cultural Affairs Specialist at the U.S. Embassy in South Africa, coordinated the Program. Mr. Ray Castillo, Director of the American Cultural Centre in Windhoek provided logistical support, as well as the Head of the American Cultural Centre in Kampala, Uganda. Ms Joyce Meadows, English Language Officer from Washington D.C., served as the group's Escort during the two-week Study Tour in the United States of America.

The Program allowed for visits to universities and media institutions in New York, Denver/Boulder and Tampa/St Petersburg. Approximately three days were spent in each of the three States visited.

2. PURPOSE OF VISIT

In the Proposal submitted to the American Embassy in Pretoria, South Africa, a request was made to grant the three African academics the opportunity to acquire first-hand information about approaches to adopt when educating journalists and scientists in the art of reporting on science and interpreting scientific material or findings. Such a project would assist three top African Journalism Schools in gathering material which would inform a post-graduate curriculum in Science, Health and Environmental reporting.

This initiative on the part of the three collaborating African Institutions – each having been identified as a Journalism (potential) Centre of Excellence in a UNESCO-commissioned Study conducted in 2006 which resulted in 12 such Centres being identified – had the objective of increasing partnerships especially with regard to curriculum development. The criteria around which the Study revolved were:

- (i) Partnerships and linkages
- (ii) Curriculum development and review; and
- (iii) Strategic Planning for Schools of Journalism

It is envisaged that the Science Journalism curriculum would in all likelihood be offered as a post-graduate qualification of approximately one year, and which would ideally develop into a Master's Degree in Journalism, incorporating science-related specialisations. In a world of climate change, health issues and carbon emissions, specialised knowledge and reporting skills of journalists become even more important in order to reach and educate the masses. Likewise scientists are keen to share their research with a variety of audiences and this could be done more effectively with training in Science Journalism.

The ultimate goal of this programme is to establish a Chair in Science Journalism (the name has yet to be determined) for Africa. Such a Chair would operate - as a partnership – on a rotational basis - for about three years (or less) in one country before moving on to another African country, in order to be truly representative of the continent. All the American role-players consulted were very interested in this idea because of the exchange and networking opportunities this project holds.

3. APPOINTMENTS IN NEW YORK CITY

For the period 15 -19 April 2009, appointments were scheduled with:

NAME	DESIGNATION	INSTITUTION	E-ADDRESS/WEBSITE
Prof. Marguerite Holloway	Co-Director: Science and Environmental Journalism	Columbia University	Myh7@columbia.edu www.journalism.columbia.edu
Mr. John Rennie	Editor-in-Chief	Scientific American	jrennie@sciam.com
Mr. George Musser Jr.	Board of Editors	Scientific American	gmusser@sciam.com www.sciam.com
Prof. Charles Seife	Associate Professor	New York University – Arthur L. Carter Journalism Institute	www.journalism.nyu.edu
Ms Laura Chang	Science Editor	New York Times	
Mr. Donald G. McNeil Jr.	Science Correspondent	New York Times	mcneil@nytimes.com

3.1 The three visitors arrived at JF Kennedy International Airport within an hour of each other after an 18-hour flight from Johannesburg and Kampala. They were met by Ms Rachida Triola of the U.S. State Department, who assisted the visitors in completing immigration requirements. Thereafter, the visitors were transported by taxi to The Lucerne Hotel in New York.

Awaiting the arrival of the group was Mr. J. Riley Sever, Program Officer in the Bureau of Educational and Cultural Affairs in the International Visitor Leadership Program. He made the itinerary for the appointments in New York available to the visitors, as well as background on the city. Mr Sever assisted the group with checking in to the Lucerne Hotel, and short while later they were joined by their U.S. State Department Escort, Ms Joyce Meadows. The encashment of stipend cheques amounting to \$2 360 was facilitated by Ms Meadows.

3.2 Columbia University

Marguerite Holloway welcomed the visitors to the University's Graduate School of Journalism. She explained their dual Degree of the Earth and Environmental Science Journalism Program. Prof. Holloway informed the visitors that the Master's in Science Journalism was introduced in 1998. The curriculum for this

Degree entails one year science training and one year journalism training. Most students have a strong science education background. According to Prof. Holloway, the Program has a strong statistical and mathematical or a numerical training focus. Furthermore, she stated that students in this Master's Program would be required to unpack the difference between medical evidence and, for example, inference. According to her, ethical issues must feature strongly.

Four areas of specialization are offered in the Master's in Science Journalism. This is possible, said Prof. Holloway because of partnerships with other departments at Columbia University. The four areas are:

- (i) Economics and Business
- (ii) Government and Politics
- (iii) Science and Health; and
- (iv) Arts and Culture

In terms of time devoted to specific content in the Master of Science Journalism Program, Prof. Holloway gave the following breakdown:

- 2 hours x 10 weeks journalism-specific topic;
- 4 hours Science per week x 16 weeks
- 2-3 hours per week throughout the year

With regard to relevant literature or publications for the Science Journalism Program, Prof. Holloway recommended the following:

- News Numbers – Victor Cohn, 1989 – 2nd edition
- How to live with Statistics – Darrell Huff (illustrated by Irving Geiss)
- The Panda's Black Box – Nathaniel C Comfort (Editor)
- A Mathematician Reads the Newspaper – John Allen (1996)

Prof. Holloway informed the visitors that the debate regarding nomenclature – for e.g. Science Journalism – is a continuing one. She acknowledged the prevalence of terms such as Environmental Reporting and climate change. She also commented on the fact admission to the Program is done carefully, taking into account the academic background and the industry experience of the candidate.

3.3 The Scientific American

At this prestigious institution Mr. John Rennie, Editor-in-Chief, received the visitors. Mr. John Rennie, aged 43 years, is the 7th editor in the history of the *Scientific American*. This magazine has been described as one that continues to identify and deliver the latest developments in science and technology across a broad range of fields.

According to Mr. Rennie, partnerships with scientists are important. He believes that journalists are able to cope with science topics if they are sufficiently enthusiastic about their job (passion). He believes that curiosity, which becomes evident through asking questions all the time, shows that first there should be journalism, then science knowledge.

Mr. Rennie explained that he, together with the Senior Editors, would decide on topics. They are interested in a broad spectrum of material. Each one will pitch his/her idea and the Board would eventually decide what would be published.

The approach of the *Scientific American* is to make use of research journals and Papers, press releases, actuality and cycles of public interest, which would be considered from an investigative angle or perspective. The idea, he says, is to always look for themes where a story can be told. Therefore, at the *Scientific American* they look for journalists who can tell a story and write clearly, he said.

Mr. Rennie cautioned against “green-washing” as would be the case in “white washing”. In this regard he said that the cynicism of journalists is, therefore, very important. It is crucial that journalists understand statistics and data, and that sustainability is the buzzword, he said. He advised that journalist should have access to short courses to gain basic knowledge on topics of a science nature. Another important strategy is to get researchers in to explain their work – in other words, it (Science Journalism) must be interactive, he said.

3.4 New York University

Associate Prof. Charles Seife said that there is much interest in the programs emanating from the Arthur L. Carter Journalism Institute at New York University.

He is responsible for teaching Science Literacy and Numeracy. (An important person whom we did not meet – since he was busy elsewhere - is Prof. Dan Fagin. However, he will certainly be consulted through electronic mail once the draft curriculum is ready.)

The Master's Degree offered in the Journalism Institute at NYU could be in the following areas:

- (i) Science, Health and Environmental Reporting (SHERP);
- (ii) Business and Economic Reporting; and
- (iii) Cultural Reporting and Criticism.

According to Prof. Seife, this is a 16-month Program, which leads to a MA in Journalism, with an Advanced Certificate in Science, Health and Environmental Reporting (SHER). In reference to the alumni of the Journalism Institute, Prof. Seife says that what unites them is a deep conviction that science is far too important to be left to scientists only. Students are taught to test all claims and statements, he said, and they have to do case studies. Furthermore, Prof. Seife indicated that they rely heavily on Experts in-and-around New York to serve as guest lecturers and for the establishment of partnerships.

In terms of the profile of their students, Prof. Seife said that they are essentially individuals with a Science background. He advised that it is necessary to teach students the philosophy of Science, Ethics, Statistics, Numeracy and Math. Prof. Seife made the curriculum available to the three representatives from Africa. For example, the following are the areas of focus:

Semester 1: Writing and Reporting Workshop 1 – This covers current topics in SHER; Science Literacy; and Numeracy.

Semester 2: Writing and Reporting Workshop 2 – This workshop focuses on Environmental Reporting; an Elective which would allow the SHERP student to specialize in a particular area of interest.

Summer Workshop: Journalistic judgment; Multimedia; and a Science Journalism workshop.

Semester 3: The content focused on would be Medical Reporting; Science Writing; fieldwork in Journalism.

A semester is approximately 14 weeks long.

3.5 The New York Times

Donald McNeil and Laura Chang met with the visitors after a brief introduction to the New York Times (NYT) by Donald, a one-time foreign correspondent in South Africa. The discussion served to focus on themes that influence Science Journalism articles at the New York Times. In a discussion regarding journalism standards and quality, Mr. McNeil indicated that he does not really know which universities offer Science Journalism. He stressed the importance of writing ability and an understanding of terminology. According to Mr. McNeil, investigative skills are definitely not for the uninitiated or the inexperienced reporter. He informed the visitors that the New York Times' weekly Supplement survived a drastic cut in supplements, and pointed out that the newspaper sells better on Tuesdays, the day on which the supplement appears. With regard to health reporting in Africa, Mr. McNeil made specific mention of reports on disease on the brink of extinction.

According to Ms Chang approximately 20 staff members are employed in the Science Program at the NYT. In addition, she advised that in order to be a good journalist:

- (i) Opportunities to retrain journalists must be available
- (ii) Science Journalism relies on experience and insight; and
- (iii) Science Journalism needs someone who is not afraid of figures

Both staff members acknowledged that they subscribe to the idea of providing a placement opportunity for journalistic interns. The importance of this form of learning was emphasized.

4. APPOINTMENTS IN COLORADO: 19 – 22 April 2009

NAME	DESIGNATION	INSTITUTION	E-ADDRESS/WEBSITE
Dr. Marguerite (Meg) Moritz	Professor and UNESCO Chair of International Education	University of Colorado at Boulder	Marguerite.Moritz@Colorado.edu www.journalism.columbia.edu

Ms Beth Gaeddert	Director of Career Services and External Affairs		
Dean Paul Voakes	Dean: School of Journalism & Mass Communication		Paul.Voakes@Colorado.edu
Tom Yulsman	Co-Director: Center for Environmental Journalism and Mass Communications		Tom.Yulsman@Colorado.edu
Len Ackland	Founding Director/Current Co-Director		Len.Ackland@Colorado.edu
Dr. Deserai Anderson Crow	Assistant Professor		Deserai.crow@colorado.edu
Dr. Polly Bugros McLean	Associate Professor		mcleanp@buffmail.colorado.edu Polly.Mclean@Colorado.edu
Dr. Jane Menken	Director: Institute of Behavioural Science		Jane.Menken@Colorado.edu
Dr. Jill Williams	Post-Doctoral Candidate		Jill.Williams@Colorado.edu
Mark Jaffe	Environment Writer	The Denver Post	mjaffe@denverpost.com
Jeanette Chavez	Managing Editor/Administration		jchavez@denverpost.com
Greg Moore	Editor		gmoore@denverpost.com
Mr. David Hosansky	Manager: Media Relations UCAR Communications	University Corporation for Atmospheric Research (UCAR)	hosansky@ucar.edu www.ucar.edu/news
Bob Henson	Editor	UCAR and National Center for Atmospheric Research (NCAR)	bhenson@ucar.edu
Thomas M. Hopson	Scientist	NCAR	hopson@ucar.edu
Laura B. Curtis	Legislative Affairs Specialist: Office of Government Affairs	UCAR	lcurtis@ucar.edu

4.1 School of Journalism and Mass Communication, University of Colorado

The visitors first meeting on Monday 20 April 2009 was in the School of Journalism and Mass Communication at the University of Colorado at Boulder. Present in this meeting were Prof. Marguerite Moritz, Mr. Len Ackland and Ms Beth Gaeddert. Mr. Len Ackland is the Founding Director of the Environmental Journalism Program. Responding to a question regarding the naming of the Program, Mr. Ackland stated that Science would be incorporated in the word 'environment'. Thus, they see "Environment" as the umbrella term and not Science. Here too it became clear that the Environmental Journalism Program is a Program for post-graduate studies. It focuses on Science Writing and Environmental Journalism. It was at the University of Colorado where the relevance of law (as in environmental policy) was mentioned for the first time as a significant component of any Science Journalism curriculum.

A further question from one of the visitors pertained to whether any of the students in the Environmental Journalism are interested in a career in academe. According to Mr. Ackland a Research track exists for such individuals.

4.1 Institute for Behavioural Sciences

After the first meeting, an appointment was scheduled for the visitors to meet with Drs. Jane Menken and Jill Williams at the Institute for Behavioural Science on the University of Colorado Campus. This research institute focuses on research training, not only in the USA but also through partnerships with academic institutions in Africa. Statistical Programs were, therefore, highlighted as being of the utmost importance, especially with regard to health issues.

4.2 School of Journalism and Mass Communication

Dean Paul S. Voakes hosted the guests for lunch at a local restaurant. Here the discussions entailed the establishment of partnerships. It was also agreed that a draft of the Science Journalism Curriculum would be forwarded to the School of Journalism and Mass Communication at the University of Colorado at Boulder.

In the evening Dr Polly McLean hosted two of the visitors for dinner. Here too further partnership opportunities were discussed.

4.3 The Denver Post, Denver

The second day in Colorado started with a trip to Denver, to meet with Mr. Mark Jaffe, Environment Writer at The Denver Post. Mr. Jaffe has a wealth of experience in reporting for the print media, especially on topics pertaining to ecology and economic reporting. He indicated that in the 1980's more initiatives by the press regarding medical reporting became evident. This resulted in a new relationship between the medical profession and the press, he claimed. Discussions also focused on Earth Day, which was to be celebrated the following Day. According to Mr. Jaffe, toxic waste dumping became a big issue and this resulted in the environmental beat taking off. He stated that basic Science reporting has often been a marginal beat because of the media's issue with research – "always more research needed". Earth Science (i.e. geology and how the world is put together) needs some attention in Science reporting. He acknowledged, however, that Science reporting is a tough slot.

During the discussion with Mr. Jaffe, it once again became obvious that to do successful Science reporting requires experience, knowledge and insight. He also pointed out that ethical issues in writing for scientific papers should be taken into account. To quote Mark Jaffe: "Newsrooms are an odd collection of people and a collection of odd people."

In the meeting with Mark Jaffe, the visitors' attention was directed to the subject of prerequisites. He emphasized the importance of History as a prerequisite for Science Journalism. According to Mr. Jaffe, "one of the luxuries of being a reporter is to fail". Topics that Mr. Jaffe considered to be important are: Health budgets; water (a big part of the USA is desert); and climate change.

The morning in Denver ended with the guests being allowed to sit in on the News Briefing of the Denver Post. Ten journalists, the Editor, Mr. Greg Moore, and the Managing Editor (Admin.) were present. Issues were raised around story ideas which centered around insurance; the economy; legislation (e.g. abolition of the death penalty) and the stance of the (Catholic) church in this matter. Of relevance – on the entertainment (yet serious) side, was a review of the movie "Earth", in preparation for Earth Day, and which the visitors were able to view in Florida.

Of significance during the press briefing was the pertinent questions posed by the Editor with regard to time frame, visuals available for story ideas; maps; the Pulitzer List.

4.4 Environmental Journalism Programme

A working lunch was spent with Mr. Tom Yulsman, Co-Director of the Centre for Environmental Journalism, and some of the Scripps Fellows, at the Environmental Journalism Centre at the University of Colorado. An important statement made during this meeting was to understand how scientists think. It was also said that there is a need to revisit the history of Science. The main driver of the economy in Colorado is still tourism.

A point which stimulated some discussion, is that the local media influenced decisions. However, the media tend to be events-driven and the audience then find themselves at the receiving end of reactive reporting. A question asked, for example, is “What is the role of Science in formulating public dialogue or policy?”

4.5 University Center for Atmospheric Research (UCAR) and the National Center for Atmospheric Research (NCAR)

In the afternoon Ms Laura Curtis transported the visitors to the National Centre for Atmospheric Research, in Boulder. Apart from Ms Curtis, other staff members who joined the meeting were David Hosansky, Thomas Hopson and Bob Henson, Editor of the UCAR Quarterly. Of value to the visitors were discussions around Scientific publications of NCAR. For example, two publications of Robert Henson, namely:

- (i) The Rough Guide to Weather (2007)
- (ii) Climate Change – Symptoms, Science and Solutions (January 2008)

An important statement made during this meeting was that we need to try to be more accurate in Science Journalism.

5. TAMPA/ST. PETERSBURG

Appointments were scheduled with the following persons in St. Petersburg, Florida, from 23 – 24 April, 2009

NAME	DESIGNATION	INSTITUTION	E-ADDRESS/WEBSITE
Mr. Rick Edmonds	Media Business Analyst	The Poynter Institute	redmonds@poynter.org www.poynter.org
Mr Bill Mitchell	Leader of News Transformation and International Programs		bmitch@poynter.org
Prof. Mark J. Walters	Associate Professor	Univ. of South Florida	mjw@stpt.usf.edu
Prof. Robert Dardenne	Associate Professor		dardenne@stpt.usf.edu
Mr. Craig Pittman	Staff Writer	St. Petersburg Times	craig@sptimes.com
Ms Amy Rettig	Director: Communications and Client Relations	The Nielsen Company	Amy.Rettig@Nielsen.com

5.1 The Poynter Institute

The approach of the Poynter Institute is unique because of its focus on professional development and mid-career training for journalists. The institute's programmes for working journalists cover ethics, writing/reporting, graphic design, photography, and multi-media, among other things. Key issues discussed included how to get scientific knowledge to the general public; how to groom scientists to become communicators; and the growth of the practice of brokering science news e.g. by public information officers in universities.

A number of advocacy and public interest groups, e.g. Sierra Club and National Aeronautic and Space Administration, are increasingly doing their own reporting on science using journalistic strategies. The visitors' attention was also drawn to the science communication programs of other federal bodies e.g. Environmental Protection Agency and National Oceanic Administration Agency. It was evident from the discussions that science journalism is better taught at the postgraduate/graduate level than at the undergraduate level. It may also be more effective to run programs for

practicing journalists because they are likely to be more motivated and to have more concrete and clearer career goals and trajectories.

At the University of Florida, a point of emphasis was the fact that journalists and scientists operate with different standards of “the truth.” It is, therefore, important to encourage people with a primary scientific background to enter the field of journalism. But the critical issue, ultimately, is how to strike a balance between science and journalism. Three alternative approaches were discussed. The first would be to have science content in areas such as natural selection, basics of physics, the scientific method, and the basics of probability.

The second would be to have one generic science course along the lines of the principles of science. A course of this nature must emphasize the teaching of the fundamentals of science in a systematic way, and it should be reasonably short. The third would be to provide for a double major comprising science disciplines and journalism simultaneously. The issue of how to market science journalism was considered too. The terms ‘science’ could be threatening to some. Hence, substituting ‘environment’ for science could make it easier to draw in students. Lastly, the apparent lack of government responsiveness to the problems that science journalists report on has tended to discourage interest in the field. Access to information is often difficult.

5.2 The St Petersburg Times

At the St. Petersburg Times, the discussions highlighted the value of having access to experts and contacts with people who can provide answers to a journalist’s questions. This Pulitzer Prize-winning newspaper has a reporter devoted to covering energy issues. Experience has shown how important it is for reporters covering science to be allowed sufficient time to work on their stories and to have the commitment of their editors.

It was suggested that training content should include a focus on the interaction between science and the law. This is crucial because whereas science is often uncertain, the law on the other hand works on the basis of certainty. Scientists should also be involved in the classroom both for the benefit of the students and the scientists themselves.

Suggestions for the curriculum:

- Design a curriculum that integrates Science, Health and Environment (SHE) as one area of specialization. This specialization could be offered at the undergraduate and graduate level but the core of it should be at graduate level.
- Design a SHE reporting course for journalists in practice to support ongoing and mid-career professional development.
- A science curriculum must place strong emphasis on the primary journalistic skills of reporting, writing, and investigation, among others.
- Areas to be covered include: ethics, graphic design, multi-media, law and policy, basic mathematics, principles of statistics, principles of science.

6. Curriculum

Elements needed in our curriculum according to the above deliberations:

- value of partnerships
- handle statistics
- math/numeracy
- journalism skills as in writing, investigative journalism, curiosity
- basic science knowledge
- philosophy of science
- sustainability
- terminology and vocabulary
- prerequisites
- the philosophy of Science
- legal issues in Science e.g. environmental laws.

7. Conclusion

New York should be on the itinerary of any visit to America for the sheer experience of “this is America, warts and all”. To visit Ground Zero after eight years, look at the massive construction work taking place there, watching hundreds if not thousands of people still milling around at the information centre, take note of the intention of the Memorial Museum that will be erected and the St Paul’s church as a beacon of hope, The box-like features of the Harlem houses and the small shops and selling points “down-town” had an atmosphere of its own. A visit to a super, general market called ‘Fairways’ in Harlem was certainly

a highlight, but our Escort told us that tourist buses do not want to go there. They obviously don't know what they're missing.

A more valuable opportunity for devising a Science Journalism curriculum, we could not have asked for. Our thanks go to all the US State Department staff for supporting us.