EFFECTIVE POSTER PRESENTATIONS

In planning a poster presentation it is useful to keep in mind the advantages of a poster over oral presentation. Posters are available for viewing for approximately two hours, not 10 minutes. Authors & interested viewers have an extensive period for discussion, not 5 minutes. More posters can be presented in the same time & space than oral presentations, & the number of simultaneous sessions can be reduced by 40% or more.

Finally, there is no first or last presentation on the program. Planning & experience will make your poster presentation clear, effective & rewarding.

GUIDELINES

Posters should be readable by viewers 5 feet away. The message should be clear & understandable without oral explanation.

1. Initial sketch Plan your poster early. Focus your attention on a few key points, i.e., a poster is NOT a manuscript. Try various styles of data presentation to achieve clarity & simplicity. Does the use of color help? What needs to be explained in words? Suggest headlines & text topics.

2. Layout Enlarge your best initial sketch, keeping the dimensions in proportion to the final poster. Poster mounts typically consist of gray fabric material & are ~60" wide & 50" high. Ideally, the rough layout should be full size. A blackboard is a convenient place to work. Print the title & headlines. Indicate text by horizontal lines. Draw rough graphs & tables. This will give you a good idea of proportions & balance. If you are working with an artist, show the artist the poster layout. Ask associates for comment. This is still in the experimental stage.

3. Final layout The artwork is now complete. The text & tables are typed but not necessarily enlarged to full size. Now ask, is the message clear? Do important points stand out? Is the pathway through the poster clear?

Your poster materials may be attached to the poster mounts by push pins. Many participants attach their printed materials, graphs or photographs to pieces of colored poster board beforehand & then attach these pieces to the mount. Carefully consider the color of your poster board. Your poster must also include a large heading which gives the title of your poster, your name, names of all collaborators & appropriate institutional affiliations.

Depending on your budget, you can also consider having your poster produced by a commercial poster production company. They will provide proofs before finalizing & will send you your poster as a single rolled document ready for display.

GUIDELINES continued

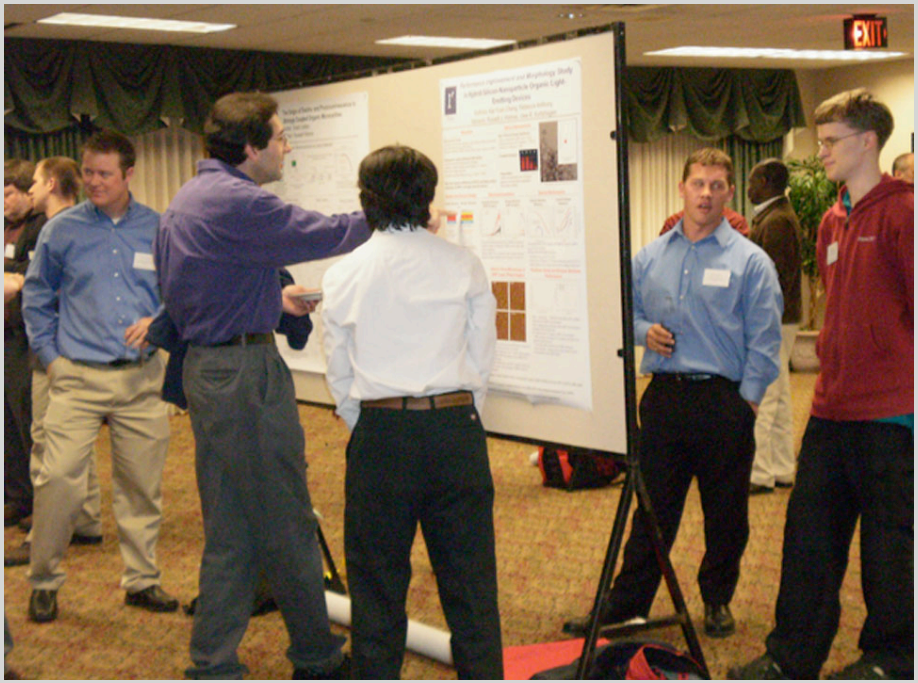
4. Balance Figures & tables should slightly cover more than 50% of the poster area. If you have only a few illustrations, make them large. Do not omit text, but keep it brief. The poster should be understandable without oral explanation since some visitors to your poster will not have time to discuss it with you.

5. Typography Avoid abbreviations, acronyms & jargon. Use a consistent type style throughout. Use large type. An $8^1/_2$ x 11 sheet of paper photostatically enlarged 50% makes text readable from 5 feet.

6. Eye movement The movement (pathway) of the eye over the poster should be natural, enter at upper left then down the columns or along rows. Size attracts attention. Arrows, numbers & letters can help clarify the sequence.

7. Simplicity The temptation to overload the poster should be resisted, i.e., it is not meant to be a manuscript. More material actually may mean less effective communication.

8. Anticipate how you will interact with visitors to your poster Although a poster must stand alone to communicate the key points of your work, a poster also offers great opportunities for discussion with visitors to your poster. Think in advance of how you plan to talk about your poster.



Examples of posters: good & bad

The following poster by Thomas et al demonstrates a balance of information & graphics. It is intended to be an example of a well-done poster.

It is designed in a way that makes it easy for the reader/visitor to come up to the poster, read & discuss the presentation with the authors as needed. It was prepared in final form by a professional poster production company.

Autoimmune dacryoadenitis induced in rabbits by intravenous injection of autologous lymphocytes activated ex vivo against lacrimal antigens

P.B. Thomas[1], D.M. Samant[1], R. Wei[1], S. Selvam[1], D. Stevenson[1], J.E. Schechter[1,2], A.K. Mircheff[1,3], M.D. Trousdale[1,4]

[1]Ocular Surface Center, Doheny Eye Institute; Departments of [2]Cell & Neurobiology, & [3]Physiology & Biophysics, [4]Ophthalmology, Keck School of Medicine, University of Southern California, Los Angeles, CA

Purpose:

❖ Autologous peripheral blood lymphocytes (PBL), activated in a mixed cell reaction when co-cultured with purified rabbit lacrimal epithelial cells, are known to induce a Sjögren's-like autoimmune dacryoadenitis when injected directly back into the donor animal's remaining inferior lacrimal gland (LG) or subcutaneously at a remote site.

❖The purpose of the present study was to determine the ability of intravenously (IV) injected autologous stimulated lymphocytes to home to the LG and induce dacryoadenitis.

Methods:

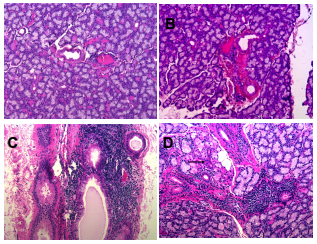
❖ One inferior LG was surgically excised from each rabbit. Acinar epithelial cells were purified, cultured for 2 days, gamma-irradiated, and then co-cultured for 5 days with purified autologous PBL. Activated lymphocytes were used for autoadoptive transfer.

❖ Rabbits receiving activated lymphocytes are referred to as the induced dacryoadenitis (ID) group.

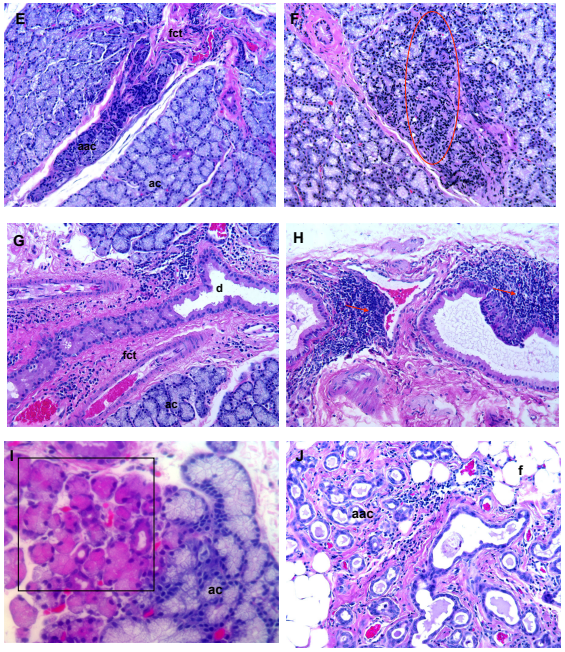
❖Normal control rabbits and those receiving non-stimulated lymphocytes are referred to as control and NS injected control, respectively.

❖ Ocular surface exams were done every 2 weeks after injection.

❖ All animals were sacrificed at the end of 4 or 8 weeks.



❖ **Fig. 1. Histopathology with H&E stain at 4 weeks. A.** Normal iLG showed occasional small lymphocytic aggregates. **B**. NS control was very similar to Normal. **C**. In the ID group lymphocytic infiltration was substantial in periductal and perivenular areas. **D**. Acinar cells with pale pink color (shown by arrow) may represent a beginning stage of degeneration..

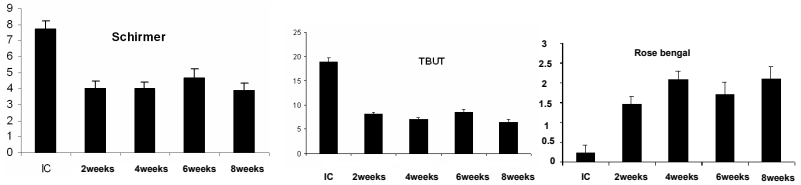


E&F:ID tissue at 8 weeks: E. Post IV injection there are normal acinar cells (ac) as well as atypical acinar cells (aac) with fibrotic connective tissue (fct). **F.** A large area of atypical acinar cells is shown within circled area.

G&H: ID tissue at 8 weeks: G. These LG frequently have streaming lymphocytes (ly) around ducts. Ductal areas (d) are atypically surrounded by dense fibrotic connective tissue (fct). **H.** Large aggregates of lymphocytes are more frequent (see arrow)

I: ID tissue at 8 weeks: Enlarged area shows plump pink acinar cells (see inside square). Acini are often dramatically altered or atypical. **J.** This lobule has shrunken atypical acinar cells (aac) which closely resemble ducts. Accumulation of fat is evident in such lobes (see arrow).

Fig. 2. Clinical ocular surface status after induction of disease. (A) Schirmer test, (B) tear break-up time, (C) rose bengal tests were performed at 2 weeks interval up to 8 weeks. Normal and injected NS control were not significantly different.



Parameter Evaluated	Direct Injection	Subcutaneous Injection	Intravenous Injection
Onset of detectable clinical dry eye	2w post injection	4w post injection	4w post injection
Severity of Disease			
1)Schirmer Test	<50%	<25%	<50%
2)Tear BUT	<60%	<40%	<70%
3)Rose Bengal Score	> to 4	> to 3.5	> to 2
Increase of Lymphocytes in LG	Fold Increase	Fold Increase	Fold Increase
1)RTLA+	>7.4	>1.7	>3
2)CD18+	>21	>3.2	>11
3)CD4+	>7.3	>3.5	>13

Results:

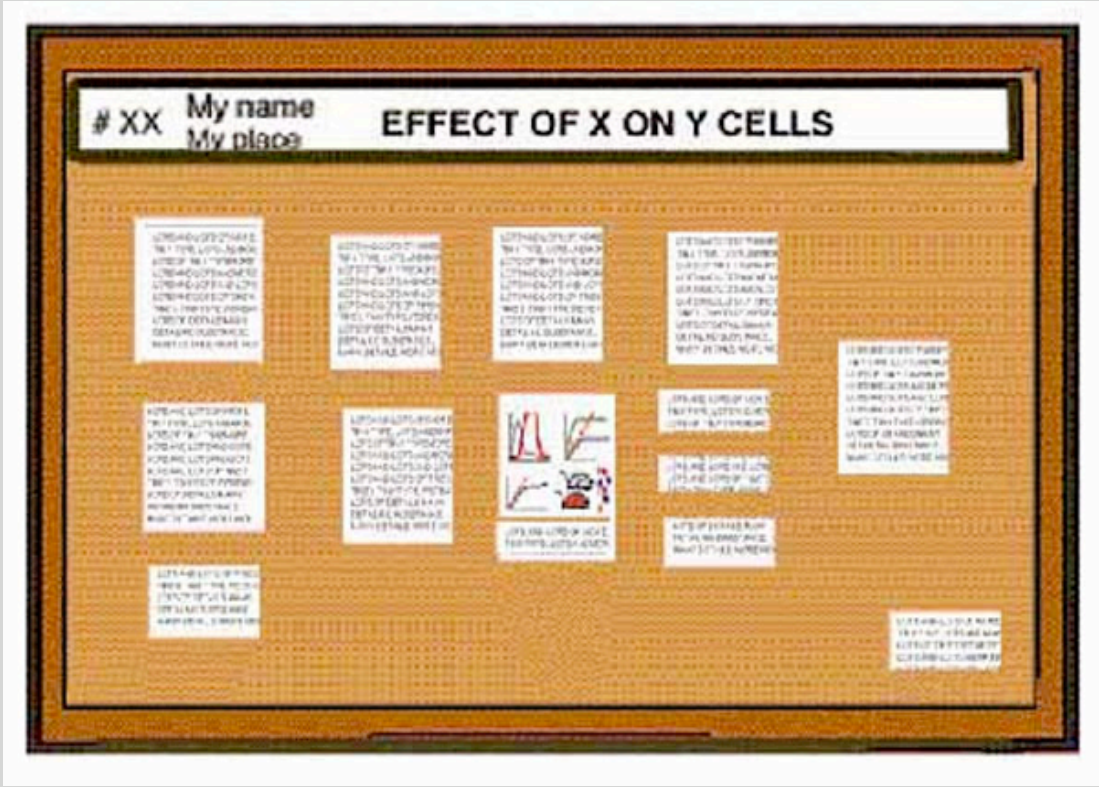
❖ Tear production in ID animals was reduced 50% by 4 weeks and tear break up time was 70% less than normal. Ocular surface defects assessed by rose bengal staining were not as pronounced as after direct injection.
❖However, 4 weeks after IV injection, unique areas of streaming lymphocytes were observed and lymphocytes were found close to interlobular and intralobar ducts.
❖At 8 weeks LG showed clusters of abnormal lacrimal acinar cells and streaming lymphocytes. The fibrotic connective tissue and increased lipid deposition is evident in areas with acinar degeneration (or ductal proliferation) .
❖Immunohistochemical staining revealed that inflammatory infiltrates were composed of predominantly CD4+ T cells.

Conclusion:

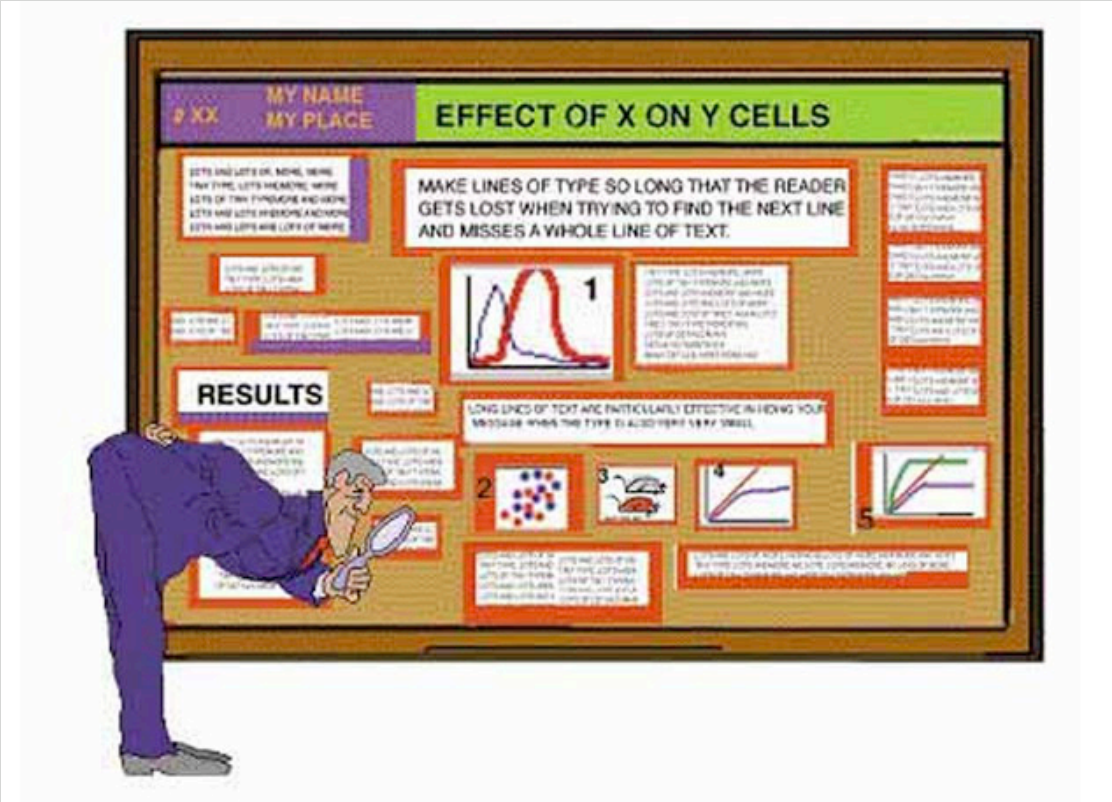
❖ Regardless of the injection site lymphocytes activated against lacrimal antigens can home to the lacrimal gland and are capable of inducing autoimmune dacryoadenitis, suggesting that the LG constitutively contains not only antigen presenting cells displaying potentially pathogenic autoantigen epitopes, but also chemokines and homing molecules that recruit CD4+ T cells.

❖ We propose that these mediators normally recruit regulatory cells, but also recruit pathogenic effector cells that have been activated in peripheral lymphoid tissues.

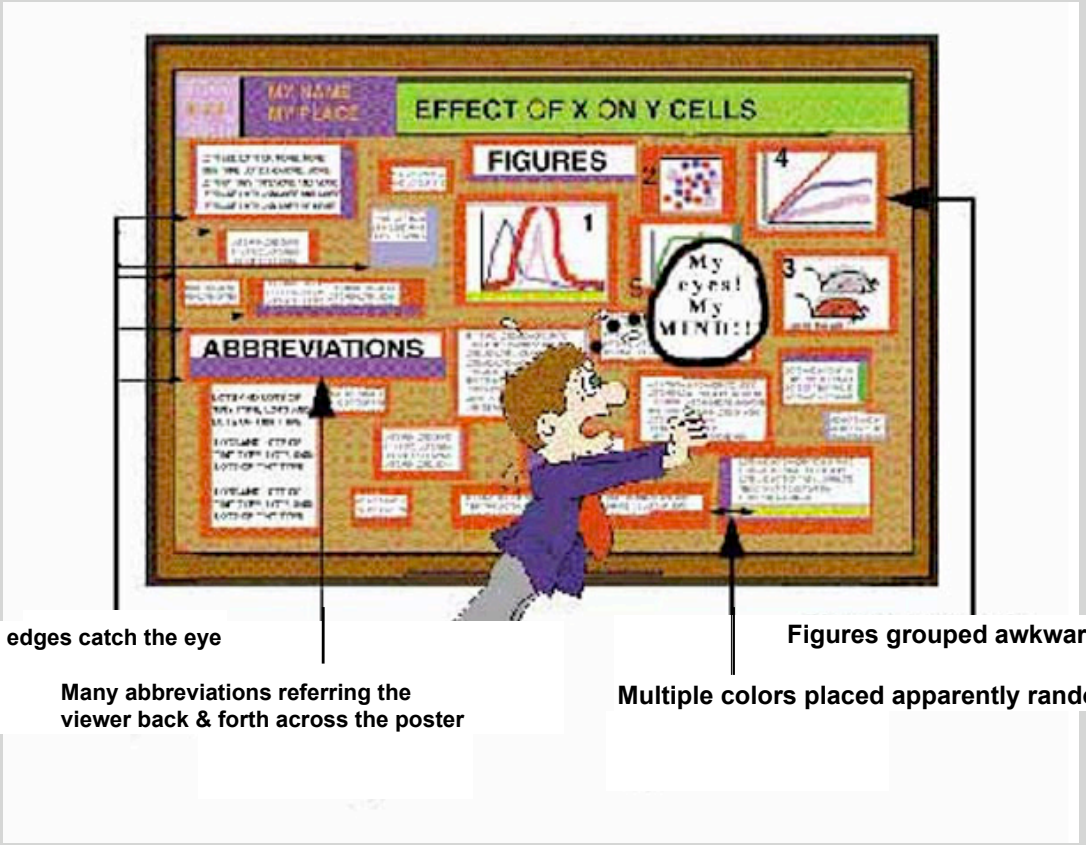
EY012689, EY005801, EY010550, EY003040 and grants from RPB and Allergan.



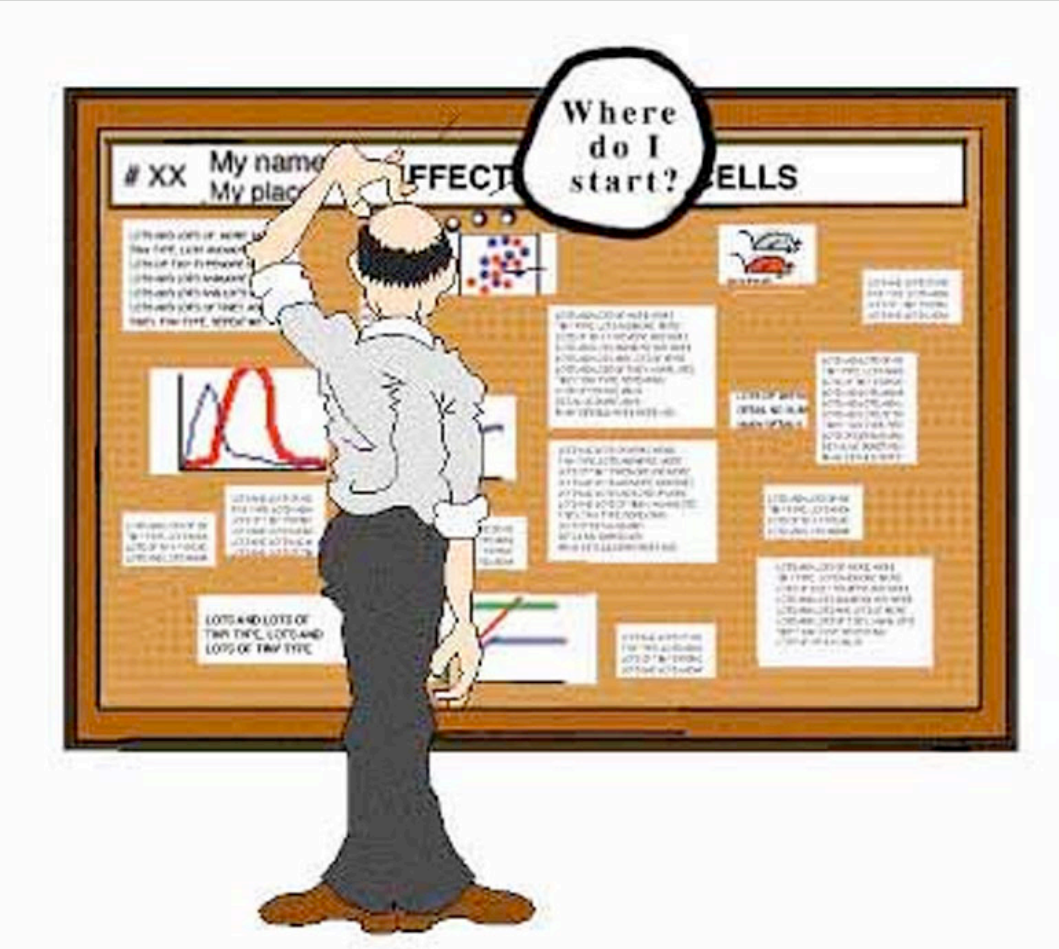
The design is weak in this presentation & there is little or no hint of how to approach & read the poster. It is provided simply as an example of poor design & for this short guide the legibility of text was not a factor, i.e., just an example.



Too crowded, confusing colors & organization. Remember that text must be large enough to be read a few feet away from the poster.



Poor design, too complex, too many items displayed. A poster should present the most important data, but not attempt to be a manuscript in itself.



The natural start point for most individuals is from upper left, i.e., it is automatic. Your poster should be designed with that in mind. This example does not succeed. Title & authors (with institutional affiliations) should be at top, intro or background at upper left, flow of information proceeds from upper left – down – etc to conclude at lower right.

Another example of a successful poster

Program# 1883

Bioengineering an Artificial Lacrimal Gland: Transepithelial Bioelectrical Properties of Rabbit Acinar Cell Monolayers on Polyester Membrane Scaffolds

S Selvam[1,2], PB Thomas[1], HJ Gukasyan[3], D Stevenson[1], AS Yu[4A], MD Trousdale[1,4B], JE Schechter[4B,4C], AK Mircheff[4B,4D], RE Smith[1,4B], SC Yiu[1,4B,4D]

[1]Ocular Surface Center, Doheny Eye Institute; [2]Mork Family Dept. of Chemical Engineering and Materials Science, Viterbi School of Engineering, University of Southern California; [3]La Jolla Laboratories, Pfizer Inc., San Diego, CA; [4]Dept. of Medicine; [B]Dept. of Ophthalmology; [C]Dept. of Cell and Neurobiology, [D]Dept. of Physiology and Biophysics, [4]Keck School of Medicine, University of Southern California, Los Angeles, CA

Introduction:

Insufficient production of tear fluid by the lacrimal glands leads to a chronic, potentially disabling condition known as dry eye.[1] Treatment strategies for this condition are aimed at rehydrating the ocular surface with electrolyte-balanced lubricant eye drops and ointments, that provide some relief but usually don't arrest or reverse eye damage. As a long-term therapeutic strategy for this condition, we envision a tissue-engineered tear secretory system that could be surgically implanted in the periocular tissues that would produce sufficient tear flow to maintain the health of the ocular surface.[2]

Purpose:

We previously showed that rabbit lacrimal acinar cells cultured on various polymeric substrata in the presence of an extracellular matrix protein, Matrigel®, retained histiotypic morphology & cell function typical of lacrimal acinar cells in vivo.[3] The current study demonstrates active transepithelial ion fluxes across rabbit lacrimal acinar cell monolayers (RLACMs) on polyester membrane scaffolds in an attempt to evaluate the bioelectrical properties of the cultured cells.

Methods:

Purified RLACs were seeded onto polyester membrane inserts. Confluent cell monolayers were stained with anti-occludin antibody. Tissue was prepared for Transmission electron microscopy (TEM) to evaluate the morphological properties of the cells. To evaluate bioelectrical properties, cell monolayers with transepithelial resistances (TER) in the range of 500-1500 ohms.cm^2 were studied (Ussing chambers) under short-circuit conditions. Cells were stimulated with basal-lateral (BL) addition of carbachol (CCh, 100 µM). Active ion fluxes were evaluated by inhibiting the short circuit current (I_{sc}) with a Na,K-ATPase inhibitor, ouabain (100 µM, BL) & under Cl-free buffer conditions following CCh stimulation. Regulated protein secretion was also evaluated by measuring the β-hexosaminidase catalytic activity in the apical (AP) culture medium in response to 100 µM CCh.

TEM image

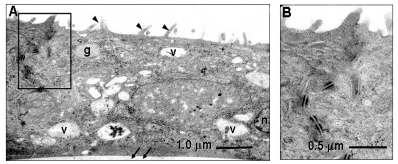


Fig. 1. Transmission electron micrographs of RLACs cultured on polyester membrane inserts. (A) The cells exhibited features typical of a glandular epithelium with apical microvilli (top arrowheads), secretory granules (g), and clear vesicles (v). The cells were joined by junctional complexes (boxed area) that included tight junctions near the apical surface. Double arrows at the bottom represent the polyester substratum. (B) A further magnification of the boxed area with a series of desmosomes.

Immunofluorescence staining for occludin

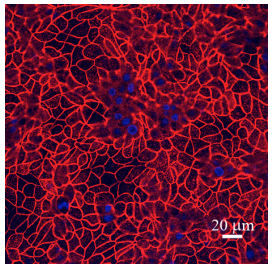


Fig. 2. Confocal microscopic evaluation of occludin, a tight junction–associated protein, in pLGACs cultured on a 12-well polyester membrane insert using rhodamine red-X-conjugated donkey anti-goat IgG secondary antibody. Nuclei of cells are visualized with DAPI (blue). Note that the nuclear stain and the occludin in a given cell could rarely both be captured in the same plane of focus due to apical level of the junctional complex.

Na,K-ATPase inhibition with

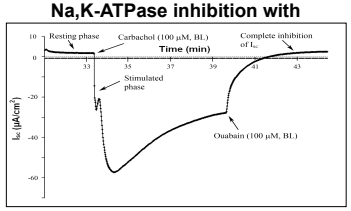


Fig. 3. Actual time course of carbachol-stimulated apical-to-basal I_{sc} and its inhibition by ouabain in RLACM on a polyester membrane insert in an Ussing chamber. Addition of 100 µM ouabain to the basal-lateral compartment rapidly altered the bioelectric properties of the cells. The instantaneous decrease in I_{sc} was accompanied by a rapid increase in TER after treatment with ouabain. Data represented is an actual trace from one of four separate experiments (n=4).

Cl^--free buffer exchange

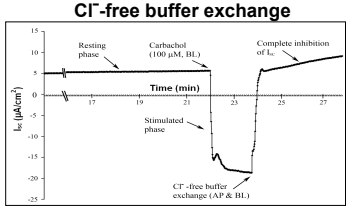


Fig. 4. Actual time course of inhibition of the carbachol-stimulated I_{sc} with apical and basal-lateral Cl^--free buffer exchange following carbachol stimulation (100 µM, BL) in RLACM on a polyester membrane insert in an Ussing chamber. The Cl^--free buffer exchange rapidly altered the bioelectric properties of the cells. The instantaneous decrease in I_{sc} was accompanied by a rapid increase in TER during buffer exchange. Data represented is an actual trace from one of four separate experiments (n=4).

β-hexoaminidase assay

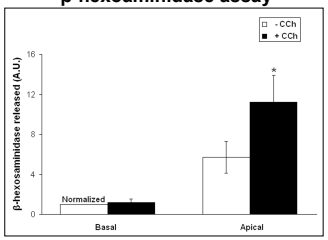


Fig. 5. β-hexosaminidase protein released on the basal and apical side of the culture medium from lacrimal acinar cells cultured on 12-well inserts when exposed with or without carbachol (CCh, 100 µM, BL, 30 min). The results represent average ± SE expressed in arbitrary units (A.U.) of four separate determinations (n=4). (*) represents significant increase at $P \leq 0.05$ from resting values and apical stimulated secretion of the cultured cells.

Results:

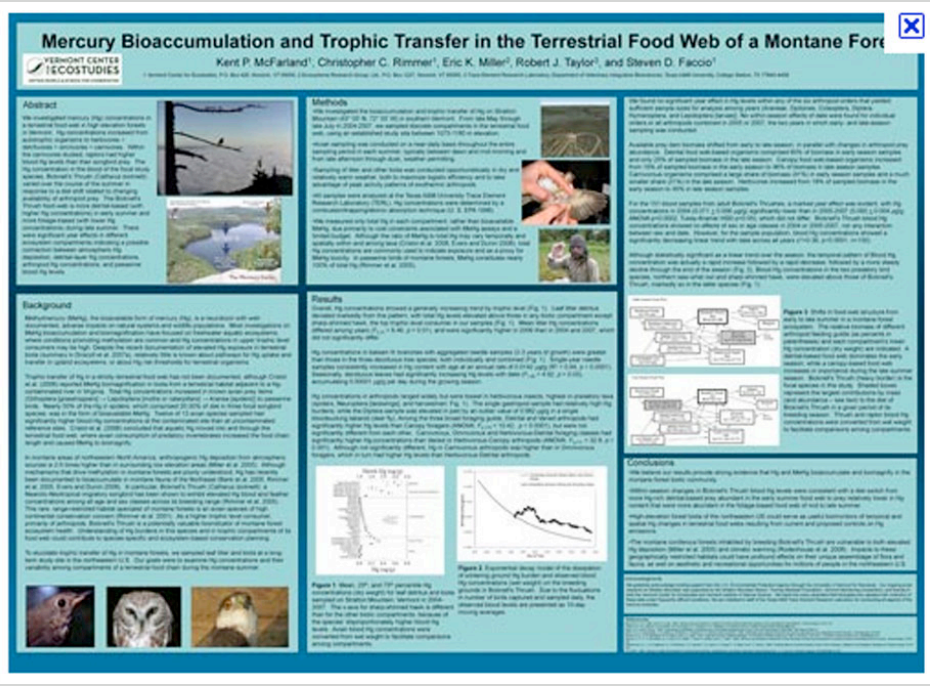
TEM of sections revealed cell monolayers with well-maintained epithelial cell polarity, i.e., presence of AP secretory granules, microvilli & junctional complexes. The presence of tight cell junctions was demonstrated by a positive circumferential stain for occludin. Cell monolayers spontaneously generated a small baseline I_{sc} in the BL→AP direction. However, stimulation with CCh induced a large I_{sc} (20-60 µA/cm^2) in the AP→BL direction. Inhibition of BL Na,K-ATPase with ouabain completely abolished I_{sc}. Furthermore, replacing both the AP and BL fluids with Cl^--free buffer solution returned I_{sc} back to baseline values. CCh stimulation increased AP protein secretion 11-fold ($P<0.05$) over the resting values of the cultured cells.

Conclusion:

The generation of a Cl^--dependent-, ouabain-sensitive AP→BL I_{sc} in response to CCh demonstrates that RLACs are capable of establishing continuous epithelial monolayers that generate active ionic fluxes consistent with current models for Na^+-dependent Cl^- secretion.[4] We believe the results indicate great promise for the fabrication of a fluid-secreting lacrimal gland device.

Support: Research to Prevent Blindness, NEI Core Grant EY03040, EY15457, EY10550, EY12689, DK062283 and Baxter Foundation Junior Faculty Award to Dr. Yiu.

Evaluate the following examples that may be either effective or not effective posters. You decide. Look at overall design and organization, not at how the text is reproduced here.



Mercury Bioaccumulation and Trophic Transfer in the Terrestrial Food Web of a Montane Fore

Kent P. McFarland[1], Christopher C. Rimmer[1], Eric K. Miller[2], Robert J. Taylor[3], and Steven D. Faccio[1]

VERMONT CENTER FOR ECOSTUDIES

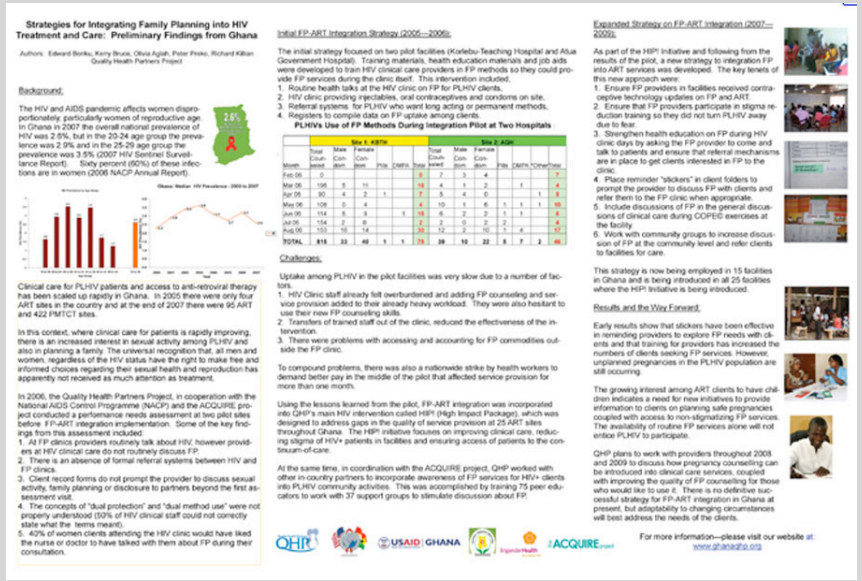
Abstract

Methods

Background

Results

Conclusions



Strategies for Integrating Family Planning into HIV Treatment and Care: Preliminary Findings from Ghana

Authors: Edward Bonku, Kerry Bruce, Olivia Agbah, Peter Preko, Richard Kilian
Quality Health Partners Project

Background:

Clinical care for PLHIV patients and access to anti-retroviral therapy has been scaled up rapidly in Ghana. In 2005 there were only four ART sites in the country and at the end of 2007 there were 95 ART and 422 PMTCT sites.

In this context, where clinical care for patients is rapidly improving, there is an increased interest in sexual activity among PLHIV and also in planning a family. The universal recognition that, all men and women, regardless of the HIV status have the right to make free and informed choices regarding their sexual health and reproduction has apparently not received as much attention as treatment.

In 2006, the Quality Health Partners Project, in cooperation with the National AIDS Control Programme (NACP) and the ACQUIRE project conducted a performance needs assessment at two pilot sites before FP-ART integration implementation. Some of the key findings from this assessment included:

1. All FP clinics providers routinely talk about HIV, however providers at HIV clinical care do not routinely discuss FP.
2. There is an absence of formal referral systems between HIV and FP clinics.
3. Client record forms do not prompt the provider to discuss sexual activity, family planning or disclosure to partners beyond the first assessment visit.
4. The concepts of "dual protection" and "dual method use" were not properly understood (50% of HIV clinical staff could not correctly state what the terms meant).
5. 40% of women clients attending the HIV clinic would have liked the nurse or doctor to have talked with them about FP during their consultation.

Initial FP-ART Integration Strategy (2006—2006):

The initial strategy focused on two pilot facilities (Korlebu-Teaching Hospital and Atua Government Hospital). Training materials, health education materials and job aids were developed to train HIV clinical care providers in FP methods so they could provide FP services during the clinic itself. This intervention included:

1. Routine health talks at the HIV clinic on FP for PLHIV clients.
2. HIV clinic providing injectables, oral contraceptives and condoms on site.
3. Referral systems for PLHIV who want long acting or permanent methods.
4. Registers to compile data on FP uptake among clients.

PLHIVs Use of FP Methods During Integration Pilot at Two Hospitals

	Site 1. KBTH							Site 2.AGH						
Month	Total Coun-seled	Male Con-dom	Female Con-dom	Pills	DMPA	Total	Total Coun-seled	Male Con-dom	Female Con-dom	Pills	DMPA	"CYP"	Total
Feb 06	0					0	7	3	4				7
Mar 06	196	5	11			16	4	1	2		1		4
Apr 06	90	4	2	1		7	5	4	0			1	5
May 06	108	0	4			4	10	1	6	1	1	1	10
Jun 06	114	6	9		1	16	6	2	2	1	1		6
Jul 06	154	2	6			8	2	0	0	2			2
Aug 06	153	10	14			30	12	0	10	1	4		17
TOTAL	815	33	46	1	1	75	39	10	22	5	7	2	46

Challenges:

Uptake among PLHIV in the pilot facilities was very slow due to a number of factors.

1. HIV Clinic staff already felt overburdened and adding FP counseling and service provision added to their already heavy workload. They were also hesitant to use their new FP counseling skills.
2. Transfers of trained staff out of the clinic, reduced the effectiveness of the intervention.
3. There were problems with accessing and accounting for FP commodities outside the FP clinic.

To compound problems, there was also a nationwide strike by health workers to demand better pay in the middle of the pilot that affected service provision for more than one month.

Using the lessons learned from the pilot, FP-ART integration was incorporated into QHP's main HIV intervention called HIPI (High Impact Package), which was designed to address gaps in the quality of service provision at 25 ART sites throughout Ghana. The HIPI initiative focuses on improving clinical care, reducing stigma of HIV+ patients in facilities and ensuring access of patients to the continuum-of-care.

At the same time, in coordination with the ACQUIRE project, QHP worked with other in-country partners to incorporate awareness of FP services for HIV+ clients into PLHIV community activities. This was accomplished by training 75 peer educators to work with 37 support groups to stimulate discussion about FP.

Expanded Strategy on FP-ART Integration (2007—2009):

As part of the HIPI Initiative and following from the results of the pilot, a new strategy to integration FP into ART services was developed. The key tenets of this new approach were:

1. Ensure FP providers in facilities received contraceptive technology updates on FP and ART.
2. Ensure that FP providers participate in stigma reduction training so they did not turn PLHIV away due to fear.
3. Strengthen health education on FP during HIV clinic days by asking the FP provider to come and talk to patients and ensure that referral mechanisms are in place to get clients interested in FP to the clinic.
4. Place reminder "stickers" in client folders to prompt the provider to discuss FP with clients and refer them to the FP clinic when appropriate.
5. Include discussions of FP in the general discussions of clinical care during COPEE exercises at the facility.
6. Work with community groups to increase discussion of FP at the community level and refer clients to facilities for care.

This strategy is now being employed in 15 facilities in Ghana and is being introduced in all 25 facilities where the HIPI Initiative is being introduced.

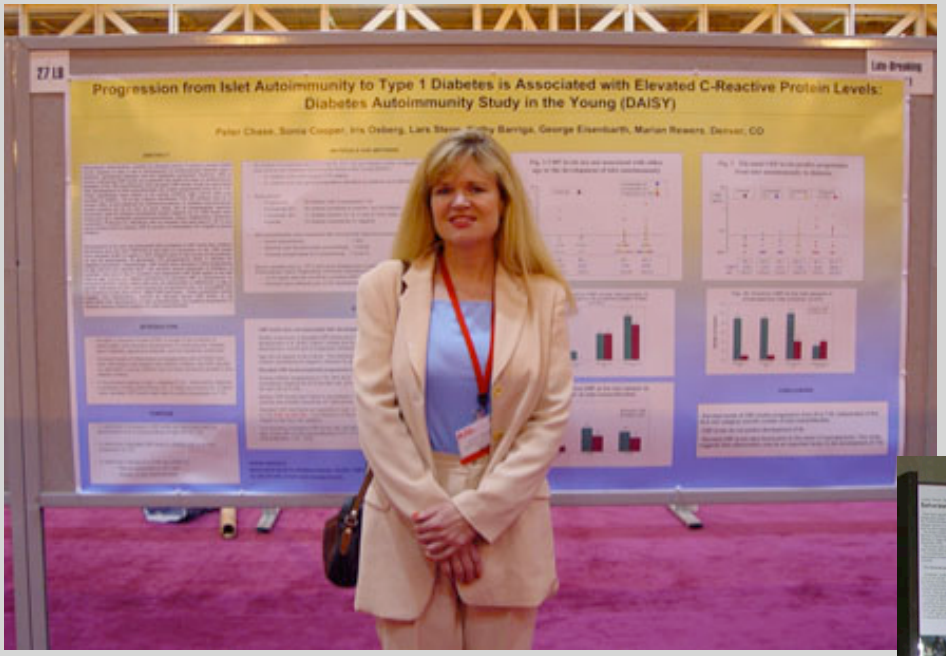
Results and the Way Forward:

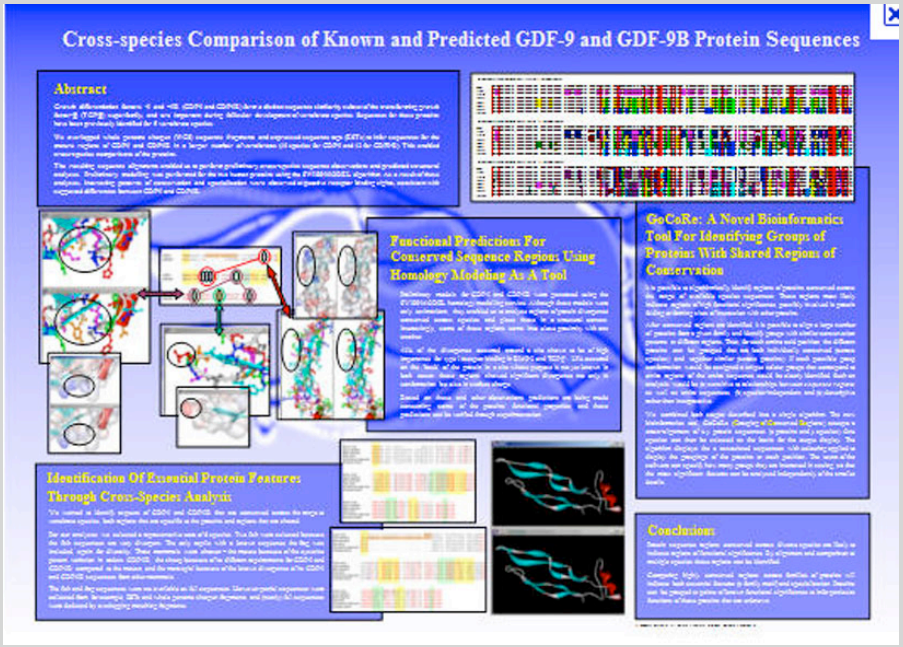
Early results show that stickers have been effective in reminding providers to explore FP needs with clients and that training for providers has increased the numbers of clients seeking FP services. However, unplanned pregnancies in the PLHIV population are still occurring.

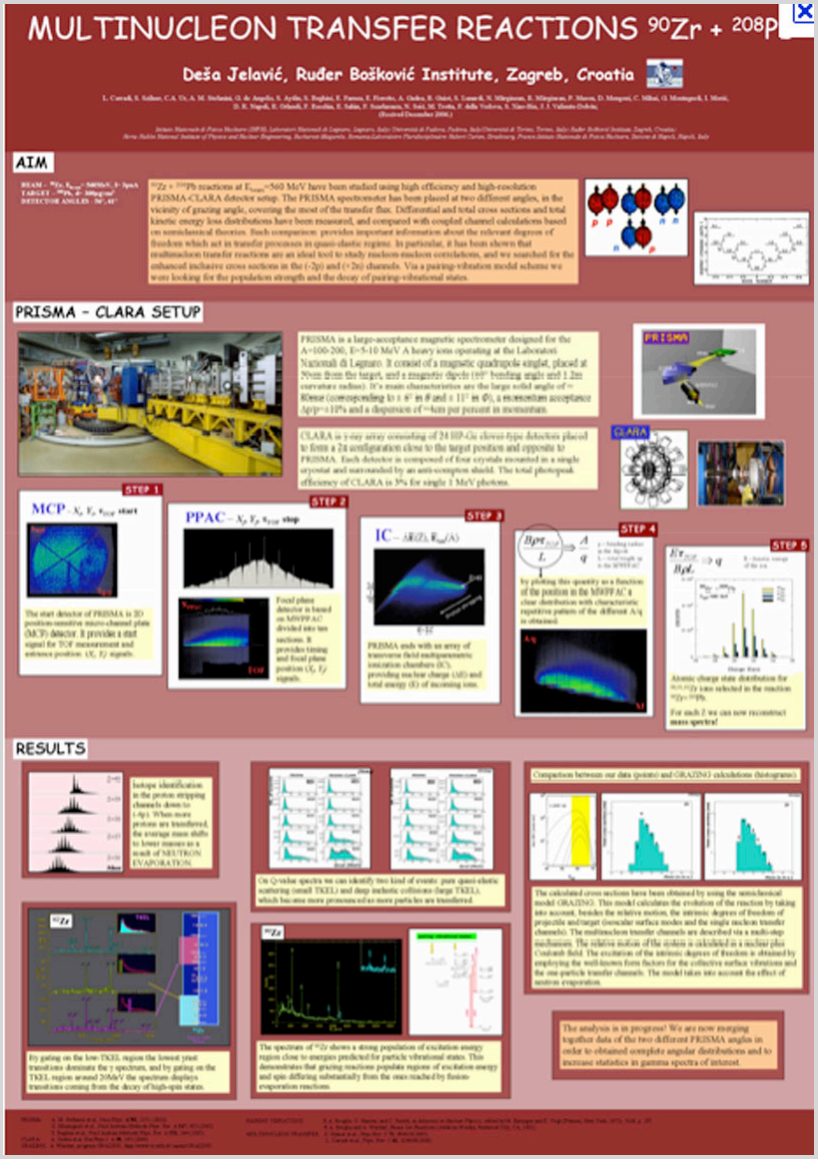
The growing interest among ART clients to have children indicates a need for new initiatives to provide information to clients on planning safe pregnancies coupled with access to non-stigmatizing FP services. The availability of routine FP services alone will not entice PLHIV to participate.

QHP plans to work with providers throughout 2008 and 2009 to discuss how pregnancy counselling can be introduced into clinical care services, coupled with improving the quality of FP counselling for those who would like to use it. There is no definitive successful strategy for FP-ART integration in Ghana at present, but adaptability to changing circumstances will best address the needs of the clients.

For more information—please visit our website at: www.ghanahp.org


Progression from Islet Autoimmunity to Type 1 Diabetes is Associated with Elevated C-Reactive Protein Levels:
Diabetes Autoimmunity Study in the Young (DAISY)


Cross-species Comparison of Known and Predicted GDF-9 and GDF-9B Protein Sequences
Abstract
Functional Predictions For Conserved Sequence Regions Using Homology Modeling As A Tool
GeCoRe: A Novel Bioinformatics Tool For Identifying Groups of Proteins With Shared Regions of Conservation
Identification Of Essential Protein Features Through Cross-Species Analysis
Conclusions


MULTINUCLEON TRANSFER REACTIONS 90Zr + 208Pb
Deša Jelavić, Ruđer Bošković Institute, Zagreb, Croatia
AIM
PRISMA - CLARA SETUP
RESULTS