

CURRICULUM VITAE AND BIBLIOGRAPHY FORMAT

FOR FACULTY

PART 1: General Information

Date prepared: March, 2004

Name: SANDRA LORA CREMERS, MD, FACS.

Office Address: 243 Charles Street. Boston, MA 02114-3096

e-mail: Sandra_Cremers@meei.harvard.edu

fax: (617) 573-4162

Place of Birth: Cochabamba, Bolivia

Education:

1992-1996 Medical Doctor

Brown University Medical School and Dartmouth Medical School

1991-1992 Masters of Public Health (pending)

Columbia University, School of Public Health

1988-1991 Bachelor of Arts

Columbia University, Columbia College

Postdoctoral Training

1997-2000 Resident, Department of Ophthalmology, New York Eye & Ear Infirmary

1996-1997 Intern, Department of Internal Medicine, Mount Auburn Hospital

Licensure and Certification

2000 Massachusetts State License, 203729

2000 Board Eligible in Ophthalmology

Academic Appointments

2000- Present Instructor in Ophthalmology Harvard Medical School/ Massachusetts Eye and Ear Infirmary

Hospital or Affiliated Institution Appointments

2000- Present Attending Surgeon, Comprehensive Ophthalmology
Service Massachusetts Eye and Ear Infirmary

Other Professional Positions and Major Visiting Appointments

2003- Present Fellow American College of Surgeons

Major Administrative Responsibilities

2001-Present Academic Advisor to Residents in Ophthalmology
Massachusetts Eye and Ear Infirmary

Major Committee Assignments

2000- Present Respiratory Care Committee Member
Massachusetts Eye and Ear Infirmary

Professional Societies

1997- Present American Academy of Ophthalmology

1998- Present American College of Surgeons

1997- Present American Society of Cataract and Refractive Surgery

1998- Present International Society of Refractive Surgery

1998- Present Association for Research and Vision Organization

1992- 2003 American Medical Association

1992- Present St. Luke's Physician's Guild

1999- 2000 Medical Society of the State of New York

1997- 2000 New York State Ophthalmologic Society

Community Service Related to Professional Work

May 2001 Governor's Conference on Aging, Participant Boston,
Massachusetts

Editorial Boards

2000- Present Editorial Advisory Board member
Ophthalmology

Awards and Honors

1996 Janet M. Glasgow Memorial Achievement Citation of the
American Medical Women's Association.

1996 Honors received in Hematology, Infectious Diseases,
Endocrinology,

Physical Diagnosis, Pediatrics, and Ophthalmology
1992 Dean's list Five of Six Semesters; Chosen to Who's Who
Among College Students; Graduated in three Years 1988-1991

PART 2: Research, Teaching, and Clinical Contributions

Narrative report of Research, Teaching and Clinical Contributions.

The focus of my research is deeply connected with my desire to teach and improve our understanding of how to improve the surgical education of residents. Thus my teaching and research contributions have in part revolved around the establishment of a database of resident cataract surgery called OASIS (Objective Assessment of Skills in Intraocular Surgery) as part of the Harvard Medical School Residents in Ophthalmology Cataract Surgery outcomes study (HMS ROCS) at the Massachusetts Eye and Ear Infirmary. I started this study in order to improve our surgical outcomes and to identify factors increasing patients' surgical risk in resident cases. In contrast to other surgical specialties, ophthalmology is severely lacking in published studies on medical education as well as risk analysis in resident cases. Knowledge about how a resident surgeon learns to become competent in their surgical skills and rely less on the surgical preceptor will improve surgical training programs. By mapping out when a surgical preceptor intervenes and when this intervention is no longer needed, we can begin to better understand the learning curve with surgical procedures. This well organized database, has allowed us to identify some basic factors involved with preoperative surgical evaluation, surgical events, and surgical care that increase a patient's surgical risk. This database is the first of its kind in any residency program in the United States. It will continue to add to our knowledge of cataract surgery risks, outcomes, and effective surgical teaching techniques.

In the teaching sphere, I have been teaching the residents clinical and surgical aspects of ophthalmology in the office and in the operative room since 2000. Most of our teaching sessions involve direct patient

care and after hours chart reviews. Each year, I give a course on surgical techniques for residents and fellows at the Massachusetts Eye and Ear Infirmary. Additionally, I have participated in the Lancaster Course Series in Colby College, Colby, Maine for residents from around the country. Finally, I have also been actively involved in teaching the Harvard Medical School students ophthalmology as part of an organized series of classes as well as during their rotation with me on our service. I currently am the preceptor to an HMS Pascal Fellow who will be working with me for the next two years. I have also sponsored over ten international medical students since 2000. Most recently, I helped establish a yearly fellowship at the Comprehensive Ophthalmology Service.

In the clinical realm, I see over one hundred patients weekly at The Massachusetts Eye and Ear Infirmary. I perform over seven laser, extraocular, and intraocular surgeries weekly. Patient education is a large part of my daily clinical practice and have also been involved with the Governor's Annual Conference on Aging in efforts to assist in patient education.

Funding information

2004- 2005 Massachusetts Lions Eye Research Fund, Pending, Primary Investigator. "Harvard Medical School Residents in Ophthalmology Surgical Outcomes Studies"

2004-2005 Harvard Medical School 50th Anniversary Program for Scholars in Medicine, Massachusetts Eye and Ear Infirmary Fellowship. "Harvard Medical School Residents in Ophthalmology Surgical Outcomes Studies."

Report of Current Research Activities

My current research interest continues to involve the analysis of surgical outcomes of our cataract patients. Clearly our goal after cataract surgery is to obtain the best potential vision as soon as possible.

Therefore, I am currently analyzing what factors limit a patient's vision in the immediate postoperative. This is tied into my teaching contributions with the surgical residents. My hope is to improve not only the surgical outcomes of our teaching cases, but improve the quality of surgical teaching of residents in ophthalmology at Harvard Medical School. The following are current research topics that we are investigating through the database.

1. Induced surgical astigmatism: how much corneal astigmatism is induced in resident surgeries in relation to the site of incision (superior versus temporal and clear cornea versus scleral tunnel).
2. Analysis of the learning curve of cataract surgery by residents: At what stage in the surgery does the attending need to assume control of the case and how and when are certain steps mastered by the resident.
3. The association of corneal edema with total surgical time, total phacoemulsification time, and the amount of balanced salt solution irrigated through the eye during surgery: Preoperative pachymetry will be compared to postoperative pachymetry and postoperative day one pachymetry in relation to total surgical time, total phacoemulsification time, and the amount of balanced salt solution irrigated through the eye during surgery, independent of total endothelial cell count.
4. An analysis of topical anesthesia cataract surgeries by residents: All topical anesthesia cases performed from 2002- present will be analyzed for complications and final visual outcomes. Factors will be assessed to help residents transition to topical anesthesia safely and more quickly.
5. Cystoid Macular Edema rates in relation to ketolorac use in resident surgery from 2002 to present: some authors have recommended ketolorac use for one month routinely in resident cases. This study will analyze CME rates between resident cases that used ketolorac for one month after surgery to those that did not.
6. Analysis of the course of diseases after cataract surgery: There are no studies evaluating the course of diabetic retinopathy after resident surgery. We would also like to study the long- term visual outcomes in patients with glaucoma and age-related macular

degeneration.

Additionally, with the creation and publication of ophthalmology's first objective surgical assessment tool to assess residents' competence (OASIS), I hope to do further studies on the reliability and construct validity of this tool along with the Subjective Assessment of Skills in Intraocular Surgery (SASIS) tool.

Finally, I am developing a residents' assessment of surgical preceptor (RASP) tool to allow residents' the ability to provide formal constructive criticism to their surgical attendings.

Other studies include the following: Retinitis Pigmentosa and cataract surgery outcomes, Postoperative restrictions on activity: an analysis of safety limitations on bending and lifting for patients in the immediate postoperative period.

Investigator for: Iressa 18391L/0039: A Randomized Double Blind, Parallel Group, Phase 11/111, Multi-center Trial of Two Doses Of ZD1839 (Iressa TM) in Patients with Advanced Non-Small Cell Lung Cancer (NSCLC) Who Have Failed at Least Two Previous Chemotherapy Regimens At Least One or Both Having Contained Platinum and a Taxane.

Report of Teaching

Local contributions

A. Medical School

2000-2002 Instructor in Ophthalmology, course to 15- 20 Harvard Medical Students per year with a total preparation and time per session of 25 hours.

B. Graduate Medical Course

August 2003, Lancaster Course, Colby College, Maine.

C. Teaching Presentations

"Phacoemulsificaton" presented to the Harvard Medical School staff, residents and students at the Massachusetts Eye and Ear Infirmary, Boston, Massachusetts- August 2004. Lecturer.

"Future Intraocular Lens materials," presented at The

New England Ophthalmology Society Meeting, Boston, Massachusetts, March 2004

“Anatomy and Physiology of the Eye,” presented at The Cataract Surgery Seminar for First Assistants at Massachusetts Eye and Ear Infirmary. April 2003.

Lecturer.

“Topical Anesthesia and Advanced Phacoemulsification Techniques,” presented to the Harvard Medical School staff, residents and students at the Massachusetts Eye and Ear Infirmary, Boston, Massachusetts - September 2002.

“Surgical Experience with Intraocular Implantation of Memory Lens,” presented at the American Society of Cataract and Refractive Surgery Conference, San Diego, California- April, 2001

“Viscocanalostomy Surgery for Congenital Glaucoma,” presented at the visiting professor lecture series with Robert Rich, MD at the New York Eye and Ear Infirmary, New York, New York - February 2000

“LASIK Experience of Residents at the New York Eye and Ear Infirmary,” presented at the New York Eye and Ear Infirmary with Barry Soloway, MD- March 2000.

“The Effects of Aging on the Eye,” presented at The Governor’s Conference on Aging, Boston Massachusetts – May 2001

D. CME course

“Future Intraocular Lens materials,” presented at The New England Ophthalmology Society Meeting, Boston, Massachusetts, March 2004

“Topical Anesthesia and Advanced Phacoemulsification Techniques,” presented to the Harvard Medical School staff, residents and students at the Massachusetts Eye and Ear Infirmary, Boston, Massachusetts - September 2002.

“Surgical Experience with Intraocular Implantation of

Memory Lens,” presented at the American Society of Cataract and Refractive Surgery Conference, San Diego, California- April, 2001

“Viscocanulostomy Surgery for Congenital Glaucoma,” presented at the visiting professor lecture series with Robert Rich, MD at the New York Eye and Ear Infirmary, New York, New York - February 2000

“LASIK Experience of Residents at the New York Eye and Ear Infirmary,” presented at the New York Eye and Ear Infirmary with Barry Soloway, MD- March 2000.

E. Advisory and Supervisory responsibilities in clinical or laboratory setting

Advisor to Clinical Fellow of Comprehensive Ophthalmology Service at the Massachusetts Eye and Ear Infirmary: 2003-2004 Joseph Ciolino, MD
2004-2005 Zandra Ferrufino-Ponce, MD

F. Teaching leadership role

Advisor to Harvard Medical School Residents in Ophthalmology:
2002- Present. Eva Kim, MD.
2003- Present. Laura Green, MD.

G. Names of advisees/trainees

2004- Present, Zandra Karina Ferrufino Ponce, MD. Research Fellow, Comprehensive Ophthalmology Services.
2003- 2004, Joseph Ciolino, MD. Resident in Ophthalmology at University of New York at Buffalo.
2004 June to August. Barat Samy, BS. Harvard Medical School, Paschal Scholar.
2004 August. Michael Wiseman. Fourth year Medical Student at Columbia University.
2004 July. Nicholas Butler. Fourth year Medical Student

at McGill University.

2002-2004 *Marcus Ko, MD*. Resident in Plastic Surgery at University of California, San Francisco

2002- 2004 *Isabel Balderas, MD*. Resident in Ophthalmology at New England Medical Center.

2003 *Renee Hsia, MD*. Resident in Ophthalmology, New York University.

March 2002 *Tzouvelekis Argyrios, MD*. Resident in Ophthalmology.

2002-2003 *Nabeel Farooqui, MD*. Resident in Ophthalmology, India.

2002 *Mays El Dairi, MD*. Resident in Ophthalmology, Israel.

2002-2003, *Elizabeth Yeu, MD*. Resident in Ophthalmology, University of Florida at Gainesville.

September 2001 *Ayaz Martin, MD*, Ophthalmologist, Israel

Regional, national, or international contributions

Invited Presentation

“Future Intraocular Lens materials,” presented at The New England Ophthalmology Society Meeting, Boston, Massachusetts, March 2004, Invited speaker.

“Topical Anesthesia and Advanced Phacoemulsification Techniques,” presented to the Harvard Medical School staff, residents and students at the Massachusetts Eye and Ear Infirmary, Boston, Massachusetts - September 2002.

“Surgical Experience with Intraocular Implantation of Memory Lens,” presented at the American Society of Cataract and Refractive Surgery Conference, San Diego, California- April, 2001

“Viscocanulostomy Surgery for Congenital Glaucoma,” presented at the visiting professor lecture series with Robert Rich, MD at the New York Eye and Ear Infirmary, New York, New York - February 2000

Professional and educational leadership

March 2004, Invited speaker. "Future Intraocular Lens materials." At The New England Ophthalmology Society Meeting.

Report of Clinical Activities

My clinical activities are performed at the Comprehensive Ophthalmology Service of the Massachusetts Eye and Ear Infirmary. I see approximately 100-150 patients per week. I perform approximately two to three laser surgeries per week and between four to eight intraocular surgeries per week. The laser surgeries include the following: laser iridotomy, YAG capsulotomy, argon trabeculoplasty, peripheral iridoplasty, LASIK, PTK (phototherapeutic keratoplasty). The intraocular surgeries include: cataract extraction (clear cornea, scleral tunnel) including topical anesthesia and chopping techniques; secondary intraocular lens implantation; sutured intraocular lens implantation; pupilloplasty; trabeculectomy. Extraocular surgeries include: pterygium excision with autograft or amniotic membrane transplantation. I perform between 6-10 minor surgery procedures per month, which include chalazion excision, lid lesion excision, punctal plug insertion, subtenon's steroid injection. The majority of my time is spent teaching residents the clinical and surgical aspects of ophthalmology. I directly supervise the residents in the clinic and focus on proper diagnosis and management of ocular diseases. In the operating room, I teach the residents various surgical techniques. I teach state of the art cataract surgery which involves topical anesthesia, clear cornea incisions using phacoemulsification. I also teach refractive aspects of cataract surgery such as limbal relaxing incisions and astigmatic keratectomies. Other surgeries I do with the residents are mentioned above.

PART 3: Bibliography

1. Original Articles

Thakker MM, Perez VL, Moulin A, Cremers SL, Foster

CS. *Multifocal nodular episcleritis with undiagnosed Hodgkin's lymphoma. Ophthalmology.* March 2003.

Cremers SL, Ciolino JB, Ferrufino-Ponce ZK, Henderson B. *Objective Assessments of Skills in Intraocular Surgery (OASIS).* Submitted to *Ophthalmology.* August 2004.

2. *Proceedings of Meetings*

March 2004 “**Future Intraocular Lens materials,**” presented at The New England Ophthalmology Society Meeting, Boston, Massachusetts.

May 2004 “**Effective Approaches to Teaching and Learning Surgery in Ophthalmology**”. ASCRS. Paper presentation.

April 2001 “**Surgical Experience with Intraocular Implantation of Memory Lens,**” presented at the American Society of Cataract and Refractive Surgery Conference, San Diego, California.

3. *Reviews, Chapters, and Editorials*

Mead, M. Cremers, SL. Preoperative Care and Instructions. In: Hersh P, et al. *Ophthalmic Surgical Procedures.* 2nd Ed. New York: Thieme 2004. Chapter author.

Crandon, A. Cremers, SL. Cataract Section. In: Hersh P, et al. *Ophthalmic Surgical Procedures.* 2nd Ed. New York: Thieme 2004. Section author.

Cremers, SL. Henderson, BA. Sutured Intraocular Lens. In: Hersh P, et al. *Ophthalmic Surgical Procedures.* 2nd Ed. New York: Thieme 2004. Chapter author.

Cremers, SL. Amniotic Membrane Transplant. In: Hersh P, et al. *Ophthalmic Surgical Procedures.* 2nd Ed. New York: Thieme 2004. Chapter author.

Cremers, SL. Lora, A., Azar, N. Pediatric Cataract. In: Hersh P, et al. *Ophthalmic Surgical Procedures.* 2nd Ed. New York: Thieme 2004. Chapter author.

Cremers, SL. Hersh, P. Limbal Stem Cell Transplantation. In:

Hersh P, et al. *Ophthalmic Surgical Procedures*. 2nd Ed. New York: Thieme 2004. Chapter author.

Cremers, SL. The Long Eye. In: Pineda, et al. *The Complicated Cataract*. Philadelphia: SLACK, 2001.

Cremers, SL. The Short Eye. In: Pineda, et al. *The Complicated Cataract*. Philadelphia: SLACK, 2001.

Cremers, SL. Anterior Segment and Lens. In: *Just the Facts*. New York: Mosby, 2002. Section author.

4. *Books, Monographs, and Text Books*

Editor: Hersh P, Zigelbaum B, Lora Cremers S. *Ophthalmic Surgical Procedures*. 2nd. Ed. New York: Thieme, 2004. This is a textbook of “State of the Art” ophthalmology surgical procedures, is planned for publication in 2004.

5. *Educational Material*

Lora Cremers S. *Teaching chopping techniques to Novice Surgeons*. Instructional video. Film Festival, ASCRS 2004.

6. *Nonprint Materials*

Lora Cremers, S., Buxton, D. *Multilayer Amniotic Membrane Transplant for Corneal Reconstruction After Trabeculectomy*. Video. Film Festival ASCRS 2000.

Lora Cremers, S., Casal, J., Buxton, D. *Reconstructive Keratoscleroplasty for Traumatic Anterior Staphyloma*. Video. Film Festival ASCRS 2000

Lora Cremers S. *Teaching chopping techniques to Novice Surgeons*. Instructional video. Film Festival, ASCRS 2004.

7. *Abstracts*

Ciolino JB, Cremers SL, Henderson BA. Axial Length is a Factor in the Complication Rate in Cataract Surgery Performed by Residents. Poster, ARVO Annual Meeting. 2004. Massachusetts Eye and Ear Infirmary.

Cremers SL, Ciolino JB, Henderson BA. Attending

Consistency as a Factor in the Complication Rate of Cataract Surgery by Residents. Paper Presentation, ASCRS Annual Symposium. March 2004. Massachusetts Eye and Ear Infirmary.

Acharya N, Cremers SL, Henderson BA, Ciolino J.

Retrospective Study of Outcomes after Phacoemulsification Cataract Extraction and Sulcus Intraocular Lens Implantation. Poster, ARVO Annual Meeting. 2004. Massachusetts Eye and Ear Infirmary.

Ciolino JB, Henderson BA, Cremers SL. Retrospective Study of Vitreous Loss Rate in Cataract Surgery Performed by Residents. Poster, ASCRS Annual Symposium. 2004. Massachusetts Eye and Ear Infirmary.

Lora Cremers, S., Maw, R., Soloway, B. *Evaluation of Alterations in Mean*

Keratometry Measurements after Hyperopic Laser In Situ Keratoplasty.

A prospective study of three, six and twelve month follow up of changes in keratometry after hyperopic LASIK. Paper presented at ASCRS, 2000

Lora Cremers, S., McCormick, S. *Electron Microscopy Observation of the Progression of Fuch's Dystrophy from the Early to Late Stages.*

Poster presented at ARVO 2000

Lora Cremers, S., McCormick, S., Koster, H. *Corneal Opacities in*

Hypolipoproteinemic States: Biochemical and Ultrastructural Studies

of Four Patients. A comparison of Tangier Disease, LCAT Deficiency Disease,

and Fish Eye Disease by electron microscopy. Poster Presented at ARVO 1998

Lora Cremers, S. *The Red Eye.* Published on Emergency.net web site