

AWARD NUMBER: W81XWH-17-1-0433

TITLE: The Urinary Fungal Mycobiome and Host Responses in Patients with Interstitial Cystitis

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REPORT DOCUMENTATION PAGE

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| 14. ABSTRACT While subject recruitment and sample acquisition remain challenging, we have 150 participants enrolled to date, have identified distinctive bacterial community types with a preliminary relationship to dysbiosis, and developed new techniques for identifying fungal species. We have successfully extracted both fungal and bacterial DNA from the catheterized urine samples and confirmed this through both quantitative polymerase chain reaction (qPCR) and gel electrophoresis. We are refining classification of bacterial communities found in both controls and individuals diagnosed with Interstitial Cystitis and are confirming the connection between specific types and pelvic pain/disease. Analysis of fungal communities has proved more challenging, requiring us to develop specific probes that will allow us to complete this analysis. We have verified the accuracy of these techniques and will proceed to apply them to our samples. | | | | | |
| 15. SUBJECT TERMS Interstitial Cystitis, Microbiome, Mycobiome, Genomics, catheterization, Proteomics, biomarkers | | | | | |
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1. **INTRODUCTION:** *Narrative that briefly (one paragraph) describes the subject, purpose and scope of the research.*

Using blood samples and catheterized samples of urine from both healthy controls and Interstitial Cystitis patients, we are studying the relationship of changes in the fungal and bacterial communities in the bladder to dysbiosis. In addition, we are looking at related changes to proteins in subjects' blood that may serve as biomarkers of disease.

2. **KEYWORDS:** *Provide a brief list of keywords (limit to 20 words).*

Interstitial Cystitis, Microbiome, Mycobiome, Genomics, catheterization, Proteomics, biomarkers

3. **ACCOMPLISHMENTS:** *The PI is reminded that the recipient organization is required to obtain prior written approval from the awarding agency grants official whenever there are significant changes in the project or its direction.*

What were the major goals of the project?

List the major goals of the project as stated in the approved SOW. If the application listed milestones/target dates for important activities or phases of the project, identify these dates and show actual completion dates or the percentage of completion.

Specific Aim 1:

Major Task 1: Patient Recruitment and Sample Accrual: Goal=300 by Month 6 – 50% complete
Major Task 2: Bacterial and Fungal Community Profiling: Goals=Sample Processing Month 10 Completed for subjects recruited. *Microbial Community Profiling*: Goal Month 14 – in process. *Bioinformatics/Biostatistical Analysis*: Goal Month 16 – not started. *Validation of Community Profiling*: Goal Month 18 – 25% complete; Primer design and validation in process.

Specific Aim 2:

Major Task 1: *De Novo* Discovery of Novel Protein Biomarkers by Deep Proteomics
Goal=Month 14. *Sample Preparation*: Goal Month 10 - Completed for subjects recruited.
Proteomics: Goal Month 12 – not started. *Bioinformatics/Biostatistical Analysis*: Goal Month 16 – not started.
Major Task 2: Multiple Reaction Monitoring Validation: Goal Months 14 to 18 – not started.

What was accomplished under these goals?

For this reporting period describe: 1) major activities; 2) specific objectives; 3) significant results or key outcomes, including major findings, developments, or conclusions (both positive and negative); and/or 4) other achievements. Include a discussion of stated goals not met. Description shall include pertinent data and graphs in sufficient detail to explain any significant results achieved. A succinct description of the methodology used shall be provided. As the project progresses to completion, the emphasis in reporting in this section should shift from reporting activities to reporting accomplishments.

We are focused on subject recruitment and sample processing while we are finalizing techniques for accurately characterizing fungal species. We have completed DNA extraction from urine and preparation of serum, plasma and PBMC's from blood for all subjects recruited to date. Other specific objectives include the definition of bacterial community types and their relationship to disease states. In addition, we are confirming and testing primer design for identifying fungal species not characterized by genomics processing. We have successfully extracted both fungal and

bacterial DNA from the catheterized urine samples and confirmed this through both quantitative polymerase chain reaction (qPCR) and gel electrophoresis. Our initial analyses revealed substantial influences of patient phenotype (particularly with regard to age and menopausal status) on microbial results, therefore, we are refining classification of bacterial communities found in both controls and individuals diagnosed with Interstitial Cystitis and are confirming the connection between specific types and pelvic pain/disease. Analysis of fungal communities has proved more challenging, requiring us to develop specific probes that will allow us to complete this analysis. We have verified the accuracy of these techniques and will proceed to apply them to our samples.

If the project was not intended to provide training and professional development opportunities or there is nothing significant to report during this reporting period, state “Nothing to Report.”

Describe opportunities for training and professional development provided to anyone who worked on the project or anyone who was involved in the activities supported by the project. “Training” activities are those in which individuals with advanced professional skills and experience assist others in attaining greater proficiency. Training activities may include, for example, courses or one-on-one work with a mentor. “Professional development” activities result in increased knowledge or skill in one’s area of expertise and may include workshops, conferences, seminars, study groups, and individual study. Include participation in conferences, workshops, and seminars not listed under major activities.

The Principal Investigator has participated in regular, professional conferences of the American Urology Association (AUA) and Society for Urogynecology and Female Urology (SUFU). In addition, she has completed an intensive course in Microbial Community Analysis and Biostatistics at the Marine Biology Laboratory (Wood’s Hole).

How were the results disseminated to communities of interest?

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

Describe how the results were disseminated to communities of interest. Include any outreach activities that were undertaken to reach members of communities who are not usually aware of these project activities, for the purpose of enhancing public understanding and increasing interest in learning and careers in science, technology, and the humanities.

Initial discoveries detailing refinements in the processing and analysis of urinary specimens for microbial characterization were reported at several society meetings, including the American Urology Association (AUA) and Society for Urogynecology and Female Urology (SUFU). A manuscript detailing these achievements has been submitted to PLOSOne and we are hopeful for a positive review of those findings shortly.

Describe briefly what you plan to do during the next reporting period to accomplish the goals and objectives.

We will complete subject recruitment and preparation of samples. Once this is done, we will proceed with proteomics and biostatistical analysis. In addition, Dr. Yang will complete the MRM Assay, multiquantita analysis and correlation of biomarkers.

4. IMPACT: Describe distinctive contributions, major accomplishments, innovations, successes, or any change in practice or behavior that has come about as a result of the project relative to:

What was the impact on the development of the principal discipline(s) of the project?

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

Describe how findings, results, techniques that were developed or extended, or other products from the project made an impact or are likely to make an impact on the base of knowledge, theory, and research in the principal disciplinary field(s) of the project. Summarize using language that an intelligent lay audience can understand (Scientific American style).

While we anticipate the following detailed analyses of our populations will yield more significant results, we have already revealed that there are substantial differences in the clinical phenotyping of patients who are pre- and post-menopausal. While both groups are clinically diagnosed with Interstitial Cystitis, early symptomatic and microbial profiling data seems to suggest these two populations are quite different and not comparable. This data in and of itself is highly impactful, because it may explain how prior studies which have not controlled for age or menopausal status have demonstrated conflicting results and may even implicate different etiologies of bladder pain in these populations.

What was the impact on other disciplines?

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

Describe how the findings, results, or techniques that were developed or improved, or other products from the project made an impact or are likely to make an impact on other disciplines.

Nothing to Report

What was the impact on technology transfer?

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

Describe ways in which the project made an impact, or is likely to make an impact, on commercial technology or public use, including:

- transfer of results to entities in government or industry;
- instances where the research has led to the initiation of a start-up company; or
- adoption of new practices.

Nothing to Report

What was the impact on society beyond science and technology?

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

Describe how results from the project made an impact, or are likely to make an impact, beyond the bounds of science, engineering, and the academic world on areas such as:

- improving public knowledge, attitudes, skills, and abilities;
- changing behavior, practices, decision making, policies (including regulatory policies), or social actions; or
- improving social, economic, civic, or environmental conditions.

Nothing to Report.

5. **CHANGES/PROBLEMS:** *The PD/PI is reminded that the recipient organization is required to obtain prior written approval from the awarding agency grants official whenever there are significant changes in the project or its direction. If not previously reported in writing, provide the following additional information or state, “Nothing to Report,” if applicable:*

Changes in approach and reasons for change

Describe any changes in approach during the reporting period and reasons for these changes. Remember that significant changes in objectives and scope require prior approval of the agency.

Identification of fungal species by next generation sequencing has not been able to quantify certain species of several crucial fungi and bacteria. For example, discriminating between species of Lactobacillus, such as *L. jensenii* vs. *L. crispatus*, which we believe to be important in distinguishing disease states is not possible with this type of sequencing. We have developed quantitative PCR approaches that will identify species that are not fully defined by processing through our Genomics Core. This method will be used alongside the Genomics analysis originally proposed, but this has required extra work and some delay as we work on and validate techniques to accomplish this.

Actual or anticipated problems or delays and actions or plans to resolve them

Describe problems or delays encountered during the reporting period and actions or plans to resolve them.

As noted above, subject recruitment has been slower than expected; however, with some alterations in recruitment methods, we have increased recruitment substantially and expect to complete recruitment during the next reporting period. As mentioned above, limitations in the ability of high-throughput sequencing to identify important microbes at the species level have required the development of independent methods to characterize and confirm the presence of several particular species that initial data suggest are candidates for a pathologic role in Interstitial Cystitis/Painful Bladder Syndrome. We have successfully developed a quantitative PCR approach that will allow us to do this and will use this method in addition to the Genomics analysis to assure the accuracy of our analysis and conclusions.

PROGRESS OF SUBJECT RECRUITMENT

Status:

(i) Number of subjects recruited/original planned target: 162/300

Number of subjects screened/original planned target: 215/400

Number of patients enrolled/original planned target: 162/300
Number of patients completed/original planned target: 162/300

(ii) Report amendments submitted to the IRB and USAMRMC HRPO for review:
Nothing to report

(iii) Adverse event/unanticipated problems involving risks to subjects or others and actions or plans for mitigation:
No unanticipated problems or risks. Nothing to report.

Describe changes during the reporting period that may have had a significant impact on expenditures, for example, delays in hiring staff or favorable developments that enable meeting objectives at less cost than anticipated.

We anticipate that the above PCR-based validation methods will be able to be achieved within the original budget and may also provide a less expensive tool for future studies.

Significant changes in use or care of human subjects, vertebrate animals, biohazards, and/or select agents
Describe significant deviations, unexpected outcomes, or changes in approved protocols for the use or care of human subjects, vertebrate animals, biohazards, and/or select agents during the reporting period. If required, were these changes approved by the applicable institution committee (or equivalent) and reported to the agency? Also specify the applicable Institutional Review Board/Institutional Animal Care and Use Committee approval dates.

Significant changes in use or care of human subjects

Nothing to Report

Significant changes in use or care of vertebrate animals

Not Applicable

Significant changes in use of biohazards and/or select agents

Not Applicable

6. PRODUCTS: *List any products resulting from the project during the reporting period. If there is nothing to report under a particular item, state “Nothing to Report.”*

- **Publications, conference papers, and presentations**

Report only the major publication(s) resulting from the work under this award.

Journal publications. *List peer-reviewed articles or papers appearing in scientific, technical, or professional journals. Identify for each publication: Author(s); title; journal; volume; year; page numbers; status of publication (published; accepted, awaiting publication; submitted, under review; other); acknowledgement of federal support (yes/no).*

Nothing to Report

Books or other non-periodical, one-time publications. *Report any book, monograph, dissertation, abstract, or the like published as or in a separate publication, rather than a periodical or series. Include any significant publication in the proceedings of a one-time conference or in the report of a one-time study, commission, or the like. Identify for each one-time publication: author(s); title; editor; title of collection, if applicable; bibliographic information; year; type of publication (e.g., book, thesis or dissertation); status of publication (published; accepted, awaiting publication; submitted, under review; other); acknowledgement of federal support (yes/no).*

Nothing to Report

Other publications, conference papers and presentations. *Identify any other publications, conference papers and/or presentations not reported above. Specify the status of the publication as noted above. List presentations made during the last year (international, national, local societies, military meetings, etc.). Use an asterisk (*) if presentation produced a manuscript.*

AL Ackerman. *The Urinary Microbiota and Host Inflammation in Lower Urinary Tract Symptoms.* American Urological Association Annual Meeting, Research Forum: Early Career Investigators Showcase. San Francisco, CA, May 2018.

- **Website(s) or other Internet site(s)**

List the URL for any Internet site(s) that disseminates the results of the research activities. A short description of each site should be provided. It is not necessary to include the publications already specified above in this section.

Nothing to Report

- **Technologies or techniques**

Identify technologies or techniques that resulted from the research activities. Describe the technologies or techniques were shared.

Nothing to Report

- **Inventions, patent applications, and/or licenses**

Identify inventions, patent applications with date, and/or licenses that have resulted from the research. Submission of this information as part of an interim research performance progress report is not a substitute for any other invention reporting required under the terms and conditions of an award.

Nothing to Report

- **Other Products**

Identify any other reportable outcomes that were developed under this project. Reportable outcomes are defined as a research result that is or relates to a product, scientific advance, or research tool that makes a meaningful contribution toward the understanding, prevention, diagnosis, prognosis, treatment and /or rehabilitation of a disease, injury or condition, or to improve the quality of life. Examples include:

- data or databases;
- physical collections;
- audio or video products;
- software;
- models;
- educational aids or curricula;
- instruments or equipment;

- *research material (e.g., Germplasm; cell lines, DNA probes, animal models);*
- *clinical interventions;*
- *new business creation; and*
- *other.*

Nothing to Report

7. PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS

What individuals have worked on the project?

Provide the following information for: (1) PDs/PIs; and (2) each person who has worked at least one person month per year on the project during the reporting period, regardless of the source of compensation (a person month equals approximately 160 hours of effort). If information is unchanged from a previous submission, provide the name only and indicate “no change”.

Example:

*Name: Mary Smith
 Project Role: Graduate Student
 Researcher Identifier (e.g. ORCID ID): 1234567
 Nearest person month worked: 5*

Contribution to Project: Ms. Smith has performed work in the area of combined error-control and constrained coding.

Funding Support: The Ford Foundation (Complete only if the funding support is provided from other than this award.)

| | |
|------------------------|-----------|
| Dr. A. Lenore Ackerman | no change |
| Dr. Michael Freeman | no change |
| Dr. Jennifer Anger | no change |
| Dr. Wei Yang | no change |

Has there been a change in the active other support of the PD/PI(s) or senior/key personnel since the last reporting period?

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

If the active support has changed for the PD/PI(s) or senior/key personnel, then describe what the change has been. Changes may occur, for example, if a previously active grant has closed and/or if a previously pending grant is now active. Annotate this information so it is clear what has changed from the previous submission. Submission of other support information is not necessary for pending changes or for changes in the level of effort for active support reported previously. The awarding agency may require prior written approval if a change in active other support significantly impacts the effort on the project that is the subject of the project report.

Nothing to Report

What other organizations were involved as partners?

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

Describe partner organizations – academic institutions, other nonprofits, industrial or commercial firms, state or local governments, schools or school systems, or other organizations (foreign or domestic) – that were involved with the project. Partner organizations may have provided financial or in-kind support, supplied facilities or equipment, collaborated in the research, exchanged personnel, or otherwise contributed.

Provide the following information for each partnership:

Organization Name:

Location of Organization: (if foreign location list country)

Partner’s contribution to the project (identify one or more)

- *Financial support;*
- *In-kind support (e.g., partner makes software, computers, equipment, etc., available to project staff);*
- *Facilities (e.g., project staff use the partner’s facilities for project activities);*
- *Collaboration (e.g., partner’s staff work with project staff on the project);*
- *Personnel exchanges (e.g., project staff and/or partner’s staff use each other’s facilities, work at each other’s site); and*
- *Other.*

Nothing to Report

8. SPECIAL REPORTING REQUIREMENTS

COLLABORATIVE AWARDS: *For collaborative awards, independent reports are required from BOTH the Initiating Principal Investigator (PI) and the Collaborating/Partnering PI. A duplicative report is acceptable; however, tasks shall be clearly marked with the responsible PI and research site. A report shall be submitted to <https://ers.amedd.army.mil> for each unique award.*

QUAD CHARTS: *If applicable, the Quad Chart (available on <https://www.usamraa.army.mil>) should be updated and submitted with attachments.*

- 9. APPENDICES:** *Attach all appendices that contain information that supplements, clarifies or supports the text. Examples include original copies of journal articles, reprints of manuscripts and abstracts, a curriculum vitae, patent applications, study questionnaires, and surveys, etc.*

Updated Curriculum Vitae Attached

Curriculum Vitae

A. Lenore Ackerman

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EDUCATION

CEDARS-SINAI MEDICAL CENTER Beverly Hills, California
Clinical Scholars Program, 2016-2018

UCLA DAVID GEFFEN SCHOOL OF MEDICINE Los Angeles, California
Internship, General Surgery, 2008-2009
Residency, Urology, 2009-2014
Fellowship, Pelvic Medicine and Reconstructive Surgery, 2014-2016

YALE UNIVERSITY New Haven, Connecticut
Doctor of Medicine, May 2008
Doctor of Philosophy, Immunobiology, May 2004
Bachelor of Science, Molecular Biophysics and Biochemistry, May 1998

HONORS

2018 AUA Research Forum: First Place Early-Career Investigators Showcase
2017 AUA Best Poster Award, Female Pelvic Medicine: Basic Research and Pathophysiology II
2017 AUA Best Poster Award, Practice Patterns, Quality of Life and Shared Decision Making V
2016 SUFU Best Basic Science Poster Award 2016
2015 Pfizer/Urology Care Foundation Urologic Research Training Award 2015
2012 SUFU Resident Travel Award 2012
2011 AUGS Resident Research Scholar 2011
2000 NIH Individual NRSA Minority Fellow
1997 NIH Underrepresented Minority Summer Research Fellow
1996 Yale Science, Technology, and Research Fellow
1995 Yale University Class of 1954 Fellow
1995 Yale Club of Atlanta Community Service Fellow
1994 Yale University Hiram B. Manville Scholar
1994 Coca-Cola National Scholar

PUBLICATIONS

1. Moradzadeh A, Jamnagerwalla J, Eilber KS, Anger JT, **Ackerman AL**. High catastrophizing in subjects with painful mesh complications have worse outcomes. *Urology*. 2018 Aug 1. pii: S0090-4295(18)30757-X. doi: 10.1016/j.urology.2018.05.050.
2. Weinberger JM, Houman J, Caron AT, Patel DN, Baskin AS, **Ackerman AL**, Eilber KS, Anger JT. Female Sexual Dysfunction and the Placebo Effect: A Meta-analysis. *Obstet Gynecol*. 2018 Aug;132(2):453-458. doi: 10.1097/AOG.0000000000002733.

3. **Ackerman AL**, Parameshwar P, Anger JT. Diagnosis and Treatment of Patients with Prostatic Abscess in the Post-Antibiotic Era. *Int J Urol*. In press. *Int J Urol*. 2017 Sep 24. doi: 10.1111/iju.13451.
4. Ramart P, **Ackerman AL***, Cohen SA, Kim JH, Raz S. The Frequency of Urinary Incontinence after Suburethral Mesh Removal Requiring Anti-Incontinence Procedure. *Urology*. 2017 May 2. pii: S0090-4295(17)30407-7. (*co-first author)
5. **Ackerman AL**, Underhill DM. The mycobiome of the human urinary tract: potential roles for fungi in urology. *Ann Transl Med*. 2017 Jan;5(2):31.
6. Cohen SA, Chaudhry Z, Oliver JL, Kreydin EI, Nguyen MT, Mills SA, **Ackerman AL**, Kim JH, Tarnay CM, Raz S. Comparison of Times to Ureteral Efflux After Administration of Sodium Fluorescein and Phenazopyridine. *J Urol*. 2017 Feb;197(2):519-523.
7. **Ackerman AL**, Raz S. Difference of opinion - Are synthetic slings safe? Opinion: No. *Int Braz J Urol*. 2016 Jul-Aug;42(4):640-4.
8. **Ackerman AL**, Jellison FC, Lee UJ, Bradesi S, Rodriguez LV. Glt1 glutamate receptor mediates the establishment and perpetuation of chronic visceral pain in an animal model of stress-induced bladder hyperalgesia. *Am J Physiol Renal Physiol*. 2016 April;310(7):F628-F636.
9. **Ackerman AL**, Lee UJ, Jellison F, Tan N, Patel M, Raman SS, Rodriguez LV. MRI suggests increased tonicity of the levator ani in women with Interstitial Cystitis/Bladder Pain Syndrome. *Int Urogyn J*. 2016 Jan;27(1):77-83.
10. Lee U, **Ackerman AL**, Wu A, Zhang R, Leung J, Bradesi S, Mayer E, Rodriguez LV. Chronic Psychological Stress in High Anxiety Rats Induces Sustained Bladder Hyperalgesia. *Physiol Behav*. 2015 Feb;139:541-548.
11. **Ackerman AL**, Rodriguez, LV. Evaluation of Primary Bladder Neck Obstruction in Men. *Curr Bladder Dysfunct Rep*. 2012 Sept; 7(3):235-241.
12. Kiyosaki K, **Ackerman AL**, Histed S, Sevilla C, Eilber K, Maliski S, Rogers RG, Anger J. Patients' understanding of pelvic floor disorders: what women want to know. *Female Pelvic Med Reconstr Surg*. 2012 May-Jun;18(3):137-42.
13. **Ackerman AL**, Blavais J, Anger J. Female Urethral Reconstruction. *Curr Bladder Dysfunct Rep*. 2010 Oct; 5:225-232.
14. **Ackerman AL**, Giodini A, Cresswell P. A role for the endoplasmic reticulum protein retrotranslocation machinery during cross presentation by dendritic cells. *Immunity*. 2006 Oct;25(4):607-17.
15. Shen H, **Ackerman AL**, Cody V, Giodini A, Hinson ER, Cresswell P, Edelson RL, Saltzman WM, Hanlon DJ. Enhanced and prolonged cross-presentation following endosomal escape of exogenous antigens encapsulated in biodegradable nanoparticles. *Immunology*. 2006 Jan;117(1):78-88.

16. Cresswell P, **Ackerman AL**, Giardini A, Peaper DR, Wearsch PA. Mechanisms of MHC class I-restricted antigen processing and cross-presentation. *Immunol Rev.* 2005 Oct;207:145-57.
17. **Ackerman AL**, Kyritsis C, Tampé R, Cresswell P. Access of soluble antigens to the endoplasmic reticulum can explain cross-presentation by dendritic cells. *Nat Immunol.* 2005 Jan;6(1):107-13.
18. **Ackerman AL**, Cresswell P. Cellular mechanisms governing cross-presentation of exogenous antigens. *Nat Immunol.* 2004 Jul;5(7):678-84.
19. **Ackerman AL**, Kyritsis C, Tampé R, Cresswell P. Early phagosomes in dendritic cells form a cellular compartment sufficient for cross presentation of exogenous antigens. *Proc Natl Acad Sci U S A.* 2003 Oct 28;100(22):12889-94.
20. **Ackerman AL**, Cresswell P. Regulation of MHC class I transport in human dendritic cells and the dendritic-like cell line KG-1. *J Immunol.* 2003 Apr 15;170(8):4178-88.
21. Fleming KG, **Ackerman AL**, Engelman DM. The effect of point mutations on the free energy of transmembrane alpha-helix dimerization. *J Mol Biol.* 1997 Sep 19;272(2):266-75.

BOOK CHAPTERS

1. **Ackerman AL**. The Use of Robotic Technology in Female Pelvic Floor Reconstruction. Anger JT, Eilber KS, editors. Cham, Switzerland: Springer; 2018. Chapter 8, The Role of Power Morcellation and Controversies; p.91-106. 180p.
2. Raz S, **Ackerman AL**. Hinman's Atlas of Urologic Surgery. 4th Edition ed. Smith JJ, Howards SS, Preminger GM, Dmochowski RR, editors. Philadelphia, PA: Elsevier; 2017. Chapter 85, Bulbocavernosus Muscle and Fat Pad Supplement; p.638-646. 1008p.
3. **Ackerman AL**, Cohen SA, Raz S. Native Tissue Repair for Incontinence and Prolapse. 1st Edition ed. Zimmern PE, De EJ, editors. Cham, Switzerland: Springer; 2017. Chapter 20, Native Tissue Repair After Failed Synthetic Materials; p.249-292. 317p.

INVITED PRESENTATIONS

1. **AL Ackerman**. *The Urinary Microbiota and Host Inflammation in Lower Urinary Tract Symptoms*. American Urological Association Annual Meeting, Research Forum: Early Career Investigators Showcase. San Francisco, CA, May 2018.
2. **AL Ackerman**. *Recent Advances in Urinary Microbiota and the Diagnosis of UTI (Urinary tract Infections)*. Mediterranean Incontinence and Pelvic Floor Society Annual Meeting, Rome, Italy, May 2018.
3. **AL Ackerman**. *Imaging in FPMRS: Ultrasound*. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, Austin, TX, March 2018
4. **AL Ackerman**. *The Urinary Microbiota: A New Paradigm in the Study of Lower Urinary Tract Symptoms*. Yale University Department of Urology. New Haven, CT, August 2017.

5. **AL Ackerman.** *Urinary Complications of Prostate Cancer Treatment.* Cedars-Sinai Urologic Cancer Update, Los Angeles, CA, June 2017.
6. **AL Ackerman.** *Female Sexual Dysfunction in the Older Patient.* Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, Scottsdale, AZ, March 2017.
7. **AL Ackerman.** *Management of Urinary Incontinence.* Third Annual Cedars-Sinai Update in OB/GYN, Los Angeles, CA, February 2017.
8. **AL Ackerman.** *The Urinary Microbiome and Bladder Hypersensitivity Syndromes.* General Surgery Grand Rounds, Cedars-Sinai Medical Center, Los Angeles, CA, January 2017.
9. **AL Ackerman,** KS Eilber, JT Anger. *Interstitial Cystitis: Etiology, Management and Mismanagement.* Obstetrics and Gynecology Grand Rounds, Cedar-Sinai Medical Center, Los Angeles, CA, October 2016.
10. **AL Ackerman.** Instructor, Female Pelvic Medicine and Reconstructive Surgery. *AUA/SUFU Guideline: Adult Urodynamics, Urodynamics Review, Neurourology, Overactive Bladder/Urgency Incontinence, Stress Urinary Incontinence, Pelvic Organ Prolapse, Vaginal Masses/Urethral Diverticulum, Urinary Fistula, Neurogenic Bladder and Incontinence, Evaluation of Female Voiding Dysfunction, Incontinence and Obstruction, AUA/SUFU Guideline: Diagnosis and Treatment of Overactive Bladder (Non-neurogenic) in Adults.* Curso de Actualizacion en Urologia, Sociedad Argentina de Urología/American Urological Association, September 2016, San Miguel de Tucuman, Argentina
11. **AL Ackerman.** *Overactive Bladder: A New Perspective on Bladder Hypersensitivity Syndromes.* Congreso Argnetino de Urologia, Sociedad Argentina de Urología/AUA Joint Symposium, San Miguel de Tucuman, Argentina. September 2016.
12. **AL Ackerman.** Genitourinary Fistulae: Approaches, Tips and Techniques. Congreso Argnetino de Urologia, Sociedad Argentina de Urología/AUA Joint Symposium, San Miguel de Tucuman, Argentina, September 2016.
13. **Ackerman AL.** *Inflammatory Responses and the Microbiome in OAB.* Basic Sciences Symposium. American Urological Association Annual Meeting, San Diego, CA, May 2016.

ABSTRACTS

1. van den Broek I, Mouapi KN, Mastali M, Holewinski R, Venkataraman V, Fu Q, **Ackerman AL**, Kim J, Freeman M, Anger JT, Millis K, Percy A, Van Eyk J. A stable-isotope labeled protein and peptide mixture for global normalization in targeted and data-independent quantitative bottom-up proteomics. ASMS Conference on Mass Spectrometry and Allied Topics, June 2018, San Diego, CA.
2. Anger J, Spivia W, van den Broek I, Crear D, **Ackerman AL**, et al. Differential Protein Expression in Patients with UCPPS: A MAPP Study. American Urological Association Annual Meeting, May 2018, San Francisco, CA, 199:4 e506: J Urol; April, 2018.

3. Kuhlmann PK, Chen A, Johnson J, Hubbard L, **Ackerman AL**, et al. Concomitant Procedures Performed at the Time of Midurethral Sling Affect Post-operative Urinary Retention Rate. Annual Meeting. American Urological Association; May 2018; San Francisco, CA, USA.
4. Scott V, Tang J, Drell T, Simm J, Salumets A, Metsis M, Underhill D, **Ackerman AL**. Evaluation of the Vaginal Mycobiome in Asymptomatic Pre-menopausal Women. Annual Meeting. American Urological Association; May 2018; San Francisco, CA, USA.
5. **Ackerman AL**, Scott V, Liu G, Shi W, Raz S. Characterization of Bacteria Identified on Explanted Mesh Slings Using Next-generation Sequencing Techniques. Annual Meeting. American Urological Association; May 2018; San Francisco, CA, USA
6. Scott V, **Ackerman AL**, Liu G, Shi W, Raz S. Immunofluorescence Localization of Bacterial Biofilms on Explanted Transvaginal Mesh Slings Removed for Chronic Pain. Annual Meeting. American Urological Association; May 2018; San Francisco, CA, USA.
7. **Ackerman AL**, Scott V, Liu G, Shi W, Raz S. Characterization of Bacteria Identified on Explanted Mesh Slings Using Next-generation Sequencing Techniques. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, March 2018, Austin, TX.
8. Anger JT, **Ackerman AL**, Spivia W, van den Broek I, Crear D, Eilber KS, Freeman M, Kim J, Fu Q, Van Eyk J. Differential Protein Expression in Patients with UCPPS: A MAPP Study. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, March 2018, Austin, TX.
9. Scott V, **Ackerman AL**, Liu G, Shi W, Raz S. Immunofluorescence Localization of Bacterial Biofilms on Explanted Transvaginal Mesh Slings Removed for Chronic Pain. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, March 2018, Austin, TX.
10. Scott V, Tang J, Drell T, Simm J, Salumets A, Metsis M, Underhill D, **Ackerman AL**. Evaluation of the Vaginal Mycobiome in Asymptomatic Pre-menopausal Women. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, March 2018, Austin, TX.
11. Moradzadeh A, Jamnagerwalla J, Eilber KS, Anger JT, **Ackerman AL**. High Catastrophizing in Subjects with Self-Reported Painful Mesh Complications Have Poorer Outcomes. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, March 2018, Austin, TX.
12. Kuhlmann P, Chen A, Johnson J, Hubbard L, **Ackerman AL**, Eilber KS, Anger JT. Concomitant Procedures Performed at the Time of Midurethral Sling Affect Post-operative Urinary Retention Rate. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, March 2018, Austin, TX.
13. Parameshwar PS, Kayondo M, **Ackerman AL**, Eilber KS, Anger JT, Tarnay CM. Post-Operative Pain Management In Patients Undergoing Perineal And Vaginal Reconstructive Surgery: An Alternative To Narcotics. American Urogynecologic Society Annual Meeting/Pelvic Floor Disorders Week, October 2017, Providence, RI.

14. **Ackerman AL**, Jie Tang J, Eilber KS, Kim J, Nickel JC, Ehrlich G, Underhill DM, Jennifer Anger JT. Shared Alterations in Urinary Bacterial Communities in Patients with Interstitial Cystitis and Overactive Bladder. American Urological Association Annual Meeting, May 2017, Boston, MA.
15. **Ackerman AL**, Tang J, Eilber KS, Kim J, Anger JT, Underhill DM, Freeman MR. Decreased Urinary Fungal Burden and Diversity in Overactive Bladder. American Urological Association Annual Meeting, May 2017, Boston, MA.
16. Juzar Jamnagerwalla J, Anger JT, Eilber KS, **Ackerman AL**. High Catastrophizing in Patients with Self-reported Painful Mesh Complications Have Poorer Outcomes. American Urological Association Annual Meeting, May 2017, Boston, MA.
17. Weinberger J, Houman J, Caron A, Baskin A, **Ackerman AL**, Eilber KS, Anger JT. Female Sexual Dysfunction Treatment: A Meta-Analysis of the Placebo Effect Across Randomized Controlled Trials. American Urological Association Annual Meeting, May 2017, Boston, MA.
18. **Ackerman AL**, Lai HH, Eilber KS, Anger JT. Symptomatic Overlap in Overactive Bladder and Interstitial Cystitis/Painful Bladder Syndrome. American Urological Association Annual Meeting, May 2017, Boston, MA.
19. **Ackerman AL**, Anger JT, Tang J, Eilber KS, Kim J, Freeman MR, Underhill DM. Alterations in the Urinary Fungal Mycobiome in Patients with Bladder Pain and Urinary Urgency. American Urological Association Annual Meeting, May 2017, Boston, MA.
20. Parameshwar PS, Borok JF, Wood LN, **Ackerman AL**, Eilber KS, Anger JT. Writing in the Margins of Sexual Function Questionnaires: A Qualitative Analysis From Women With Pelvic Floor Disorders. American Urological Association Annual Meeting, May 2017, Boston, MA.
21. **Ackerman AL**, Jie Tang J, Eilber KS, Kim J, Nickel JC, Ehrlich G, Underhill DM, Jennifer Anger JT. Shared Alterations in Urinary Bacterial Communities in Patients with Interstitial Cystitis and Overactive Bladder. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, March 2017, Scottsdale, AZ.
22. **Ackerman AL**, Anger JT, Tang J, Eilber KS, Kim J, Freeman MR, Underhill DM. Alterations in the Urinary Fungal Mycobiome in Patients with Bladder Pain and Urinary Urgency. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, March 2017, Scottsdale, AZ.
23. **Ackerman AL**, Tang J, Eilber KS, Kim J, Anger JT, Underhill DM, Freeman MR. Decreased Urinary Fungal Burden and Diversity in Overactive Bladder. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, March 2017, Scottsdale, AZ.
24. **Ackerman AL**, Eilber KS, Tang J, Kim J, Underhill DM, Anger JT, Freeman MR. Optimization of DNA Extraction from Human Urinary Samples for Microbial Community Profiling. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, March 2017, Scottsdale, AZ.
25. Thum DJ, Wood LM, Moradzadeh A, Hannemann A, Li A, **Ackerman AL**, Anger JT, Eilber KS. Concomitant Treatment of Stress Urinary Incontinence and Gynecologic Oncology Surgery: Are We

Undertreating? Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, March 2017, Scottsdale, AZ.

26. Parameshwar PS, Kayondo M, **Ackerman AL**, Anger JT, Tarnay C. Effects of Group Rehabilitation upon Women Undergoing Surgery for Obstetric Fistula. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, March 2017, Scottsdale, AZ.
27. **Ackerman AL**, Handler S, Samimi P, Anger JT, Eilber KS. Practice Patterns for the Evaluation of Asymptomatic Microscopic Hematuria in Women in a Single Healthcare System: Room for Improvement? Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, March 2017, Scottsdale, AZ.
28. **Ackerman AL**, Lai HH, Eilber KS, Anger JT. Symptomatic Overlap in Overactive Bladder and Interstitial Cystitis/Painful Bladder Syndrome. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, March 2017, Scottsdale, AZ.
29. Weinberger J, Houman J, Caron A, Baskin A, **Ackerman AL**, Eilber KS, Anger JT. Female Sexual Dysfunction Treatment: A Meta-Analysis of the Placebo Effect Across Randomized Controlled Trials. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, March 2017, Scottsdale, AZ.
30. Van den Broek I, Fu Q, Kushon S, Chansky K, Kowalski MP, Millis K, Percy A, Agreste T, **Ackerman AL**, Anger JT, Holewinski R, Venkatraman V, Van Eyk JE. A Precision Proteomics Pipeline for Remote Blood Monitoring: Integrating Volumetric Absorptive Microsampling with High-Throughput Mass Spectrometric Proteotyping. US HUPO 13th Annual Meeting: Precision Proteomics for Discovery and Health, March 2017, San Diego, CA.
31. Van den Broek I, Fu Q, **Ackerman AL**, Anger JT, Kushon S, Chansky K, Millis K, Percy A, Agreste T, Van Eyk JE. Accuracy of Volumetric Absorptive Microsampling for Quantification of Protein Biomarkers. The Association for Mass Spectrometry: Applications to the Clinical Lab, January 2017, Palm Springs, CA.
32. **AL Ackerman**, KS Eilber, J Tang, J Kim, MR Freeman, JT Anger. A Diverse, Viable Fungal Community ("Mycobiome") Exists in the Urine of Healthy Asymptomatic Females. American Urogynecologic Society Annual Meeting/Pelvic Floor Disorders Week, September 2016, Denver, CO.
33. MT Nguyen, SA Cohen, JY Mei, **AL Ackerman**, J Oliver, El Kreydin. Preliminary Report on the Outcomes of the Vastus Lateralis-Fascia Lata Graft for Repair of Anterior Vaginal Wall Prolapse. American Urogynecologic Society Annual Meeting/Pelvic Floor Disorders Week, September 2016, Denver, CO.
34. SJ Handler, P Samimi, **AL Ackerman**, JT Anger, KS Eilber. Practice Patterns for the Evaluation of Asymptomatic Microscopic Hematuria in Women in a Single Healthcare System: Room for Improvement? American Urogynecologic Society Annual Meeting/Pelvic Floor Disorders Week, September 2016, Denver, CO.
35. P Samimi, SJ Handler, **AL Ackerman**, KS Eilber, JT Anger. Recurrent UTI in women: patient characteristics, natural history, and referral practice patterns. American Urogynecologic Society Annual Meeting/Pelvic Floor Disorders Week, September 2016, Denver, CO.

36. **Ackerman AL**, Anger JT, Eilber K, Funari V, Tang J, Kim J, Freeman M. Identification of a Diverse Fungal Community (“Mycobiome”) in the Normal Female Human Lower Urinary Tract. American Urological Association Annual Meeting, San Diego, CA, May 2016.
37. Kreydin E, Kim M, Oliver J, Cohen S, **Ackerman AL**, Chaudhry Z, Nguyen MT, Kim JH, Raz S. Til Death Do Us Part: The Relationship between Urinary Incontinence and Marital Status among US Women and Men. American Urological Association Annual Meeting, San Diego, CA, May 2016.
38. Kreydin E, Oliver J, Kim M, Cohen S, **Ackerman AL**, Raz S, Lerner L. Prostate Ablation and Enucleation: Comparison of Patient Characteristics and 30-day Surgical Outcomes Using a National Database. American Urological Association Annual Meeting, San Diego, CA, May 2016.
39. **Ackerman AL**, Anger JT, Eilber KS, Funari V, Tang J, Kim J, Freeman MR. Identification of a Diverse Fungal Community (“Mycobiome”) in the Normal Female Human Lower Urinary Tract. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, New Orleans, LA, February 2016.
40. Ramart P, **Ackerman AL**, Cohen SA, Kim J-H, Raz S. Urinary Incontinence After Suburethral Mesh Removal Requiring Anti-Incontinence Procedures. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, New Orleans, LA, February 2016.
41. Cohen SA, Oliver JL, Kreydin EI, Chaudhry Z, Nguyen MT, Mills SA, **Ackerman AL**, Kim J-H, Tarnay CM, Raz S. Comparison of Times to Ureteral Efflux After Administration of Sodium Fluorescein and Phenazopyridine. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, New Orleans, LA, February 2016.
42. Kreydin EI, Oliver JL, Kim MM, **Ackerman AL**, Cohen SA, Kim J-H, Raz S. ‘Til Death Do Us Part: The Relationship Between Urinary Incontinence and Marital Status Among US Women and Men. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, New Orleans, LA, February 2016.
43. Kreydin EI, Kim MM, Oliver JL, Cohen SA, **Ackerman AL**, Kim J-H, Raz S. Higher Urine Levels of Environmental Toxins Are Associated with Increased Incontinence and Nocturia in Men. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, New Orleans, LA, February 2016.
44. Scott VCS, Cohen SA, Greenberg SA, Kreydin EI, Oliver JL, **Ackerman AL**, Chaudhry Z, Nguyen MT, Kim J-H, Raz S. Use of Iliotibial Band (Fascia Lata) as a Salvage Continence Repair After Mesh Removal – At Least 6 Months Follow Up. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, New Orleans, LA, February 2016.
45. **Ackerman AL**, Eilber KS, Caron AT, Pollard ME, Anger JT. Outcomes of Pregnancy Following Surgery for Pelvic Organ Prolapse: A Systematic Review. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, New Orleans, LA, February 2016.

46. Ramart P, **Ackerman AL**, Cohen SA, Kang DC, Choi JM, Kim J-H, Raz S. Urinary incontinence after suburethral mesh removal requiring anti-incontinence procedure. International Continence Society Annual Meeting, Montreal, Canada, October 2015.
47. Cohen SA, Viragh KA, Nakamura LY, **Ackerman AL**, Ramart P, Kang DC, Choi JM, Kim J-H, Raman SS, Raz S. Using Translabial Ultrasound as an Effective Tool to Visualize Mesh Erosion into the Urethra and Bladder. American Urological Association Annual Meeting, New Orleans, LA, May 2015.
48. Choi JM, Ramart P, Kang DC, Cohen SA, **Ackerman AL**, Raz S. Pubovaginal Sling with Tensor Fascia Lata. American Urological Association Annual Meeting, New Orleans, LA, May 2015.
49. **Ackerman AL**, Jellison FC, Lee UJ, Bradesi S, Rodríguez LV. Glt1 Glutamate Receptor Mediates The Establishment And Perpetuation Of Chronic Visceral Pain In An Animal Model Of Bladder Pain Syndrome/Interstitial Cystitis. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, Scottsdale, AZ, February 2015.
50. Cohen SA, Mellano EM, Chaudhry Z, **Ackerman AL**, Ramart P, Scott VC, Kim J, Raz S. Cystocele Repair Using Autologous Iliotibial Band. Presentation: Video 15. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, Scottsdale, AZ, February 2015.
51. **Ackerman AL**, Lee UJ, Jellison FC, Margolis DC, Tan N, Patel M, Raz S, Raman SS, Rodriguez LV. MRI Imaging Suggests Increased Tonicity of the Levator Ani Muscle Complex in Women with Interstitial Cystitis/Bladder Pain Syndrome. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, Scottsdale, AZ, February 2015.
52. **Ackerman AL**, Lima BP, Ramart P, Mellano E, Lux R, Shi W, Raz S. The Role of Bacterial Biofilms and Chronic Inflammation in the Delayed Development of Systemic Side Effects Following Transvaginal Placement of Mesh Slings for Incontinence. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, Scottsdale, AZ, February 2015.
53. Choi JM, Ramart P, Kang D, **Ackerman AL**, Cohen S, Raz S. Abdominal Sacrocolpopexy Mesh Complications: Presentation and Surgical Removal Techniques. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, Scottsdale, AZ, February 2015.
54. Kang D, Hartshorn T, Pollard M, Choi J, Rodriguez L, Kim JH, **Ackerman AL**, Cohen S, Ramapart P, Raz S. Patient Quality of Life after Removal of Vaginal Mesh. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, Scottsdale, AZ, February 2015.
55. Mellano EM, Lima B, Ramart P, **Ackerman AL**, Lux R, Shi W, Raz S. The Role of Bacterial Biofilms and Chronic Inflammation in the Delayed Development of Pain following Transvaginal Placement of Mesh Slings for Incontinence. American Urogynecologic Society Annual Meeting/Pelvic Floor Disorders Week, October 2015, Seattle, WA.
56. Le N-B, **Ackerman AL**, Zhang R, Lee UJ, Leung J, Rodriguez LV. Mast Cell Activation, Mediator Levels, Tactile Allodynia, and Urothelial Topography in Wistar-Kyoto Rodents Exposed to Chronic Water Avoidance Stress. Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction Annual Meeting, Las Vegas, NV, February 2013.

57. **Ackerman AL**, Lee UJ, Tan N, Raz S, Raman SS, Rodriguez LV. Alterations in the Pelvic Floor Musculature on Pelvic MRI in Patients with Interstitial Cystitis. American Urological Association Annual Meeting, Atlanta, GA, May 2012.
58. Rogo-Gupta L, Hartshorn TG, Chow D, Le NB, Jellison F, **Ackerman AL**, Rodriguez LV, Raz S. Complications of Mesh-augmented Pelvic Organ Prolapse and Incontinence Repairs: Case Series of 319 Procedures. American Urological Association Annual Meeting, Atlanta, GA, May 2012.
59. Jellison F, Le NB, **Ackerman AL**, Rogo-Gupta L, Chow D, Chamie K, Raman S, Rodriguez L, et. al. Relationship Between Physical Examination, Dynamic MRI, and Intra-operative Findings in the Treatment of Pelvic Organ Prolapse. American Urological Association Annual Meeting, Atlanta, GA, May 2012.
60. **Ackerman AL**, Le N-B, Jellison F, Rogo-Gupta L, Chow D, Hartshorn TG, Rodriguez LV, Raz S. Anatomical, functional, and quality of life outcomes of transvaginal sacrouterine ligament suspension for vaginal vault prolapse. Society of Urodynamics and Female Urology Annual Meeting, New Orleans, LA, February 2012. Recipient of Resident Travel Award.
61. **Ackerman, AL**, Lee U, Zhang R, Le N-B, Leung J, Bradesi S, Rodriguez LV. Alterations in Neurotransmitter Processing in Rodents Exposed to Chronic Water Avoidance Stress. Society of Urodynamics and Female Urology Annual Meeting, New Orleans, LA, February 2012.
62. **Ackerman AL**, Chestovich P, Dubina E, Tillou A, Anger JT. Patterns of Care for Urethral Trauma in Patients with Pelvic Fracture. Society of Urodynamics and Female Urology Annual Meeting, New Orleans, LA, February 2012.
63. Chow D, Jellison F, Hartshorn T, Rogo-Gupta L, Le NB, **Ackerman AL**, Staack A, Rodriguez L, Raz S. Translabial Ultrasound for Localization of Vaginal Mesh. Society of Urodynamics and Female Urology Annual Meeting, New Orleans, LA, February 2012.
64. Le NB, Jellison F, **Ackerman AL**, Rogo-Gupta L, Chow D, Baxter ZC, Treat E, Hartshorn T, Kim JH, Rodriguez L, Raz S. Anterior Colporrhaphy Using Polypropylene Sutures: Our Two-year Experience. Society of Urodynamics and Female Urology Annual Meeting, New Orleans, LA, February 2012.
65. **Ackerman AL**, Giodini A, Cresswell P. A Role for the Endoplasmic Reticulum Protein Retrotranslocation Machinery in Cross Presentation by Dendritic Cells. Annual MD/PhD Student Conference, Keystone, Colorado, July 2007.
66. Friedman AL, **Ackerman AL**, Laskowski KR, Winer J. Brain death is reported inaccurately by major American newspapers: Analysis of 354,601 articles in 2005. American Transplant Congress, San Francisco, California, May 2007.
67. **Ackerman AL**, Kyritsis C, Tampé R, Cresswell P. Early Phagosomes in Dendritic Cells Form a Cellular Compartment Sufficient for Cross Presentation of Exogenous Antigens. International Congress of Immunology, Montreal, Canada, July 2004.

68. Hanlon DJ, **Ackerman AL**, Shen H, Cresswell P, Saltzman M. Nanoparticle-Mediated Delivery of Antigens to Dendritic Cells: Increased Efficiency and Duration of Antigen Processing and Presentation. International Congress of Immunology, Montreal, Canada, July 2004.
69. **Ackerman AL** and Cresswell P. Regulated MHC Class I Transport in Human Dendritic Cells Facilitates Proper Immune Activation and Limits Autoimmunity. Keystone Symposium on Dendritic Cells, Keystone, Colorado, March 2003.
70. **Ackerman AL** and Cresswell P. Regulation of MHC Class I Transport in Human Dendritic Cells and the Dendritic-like Cell Line KG-1. International Congress of Immunology, Stockholm, Sweden, July 2001.

VOLUNTEER/COMMUNITY SERVICE

Volunteer – Medicine for Humanity, 2015
 Coordinator – Medical Reserve Corps (MRC), 2004-2008
 Volunteer – Yale-HAVEN Free Clinic, 2005-2008
 Program Coordinator – Graduate Student Research Symposium, 2000
 Volunteer – Genetics Education Outreach Program, Yale University, 1999-2002
 Volunteer – Pediatric Emergency Department, Yale-New Haven Hospital, 1998-2000

TEACHING EXPERIENCE

Graduate Teaching Center at Yale – Science Teaching Consultant, 2000-2002
 Medical Impact of Basic Science – Teaching Assistant, Yale University, 2001-2003
 Biological Mechanisms of Reaction to Injury – Teaching Assistant, Yale University, 2000
 Biology of AIDS – Adjunct Professor, Albertus Magnus College, 2000
 Cellular Basis of Behavior – Teaching Assistant, Yale University, 1999

PROFESSIONAL ORGANIZATIONS

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|---|--------------|
| International Urogynecological Association | 2016-present |
| Society for Urodynamics Female Pelvic Medicine and Urogenital Reconstruction | 2015-present |
| American Urogynecologic Society | 2015-present |
| Federation of Clinical Immunology Societies | 2015-present |
| Society for Women in Urology | 2014-present |
| Los Angeles Urological Society | 2008-present |
| American Urological Association | 2008-present |
| American Medical Association | 2004-present |
| American Association of Immunologists | 2004-present |