

## **Jason M. Rauceo**

Position Held: Associate Professor of Biology

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### **Higher Education**

- |                              |           |                              |
|------------------------------|-----------|------------------------------|
| • Columbia University        | 2006-2008 | Post-doctoral Researcher     |
| • The Graduate Center (CUNY) | 2000-2006 | MPhil/PhD, Molecular Biology |
| • Hunter College (CUNY)      | 1996-1999 | B.A., Biology                |

### **Academic and Professional Experience**

2008 – Present      John Jay College of Criminal Justice (CUNY), New York

#### **Associate Professor Molecular Biology**

- Courses taught include General Biology I and II lecture and laboratory, Paced General Biology I and II lecture, Genetics, Microbiology, Molecular Biology Laboratory I and II, Environmental Science Laboratory, and Forensic Science Research Internship. Course coordinator for Microbiology, Genetics, and General Biology II.

2008 – 2008      Brooklyn College, New York

#### **Adjunct Assistant Professor Microbiology**

- Lecturer for the undergraduate Microbiology course

2006 – 2008      Columbia University, New York

#### **Postdoctoral Researcher, Dr. Aaron Mitchell Laboratory**

- Performed extensive genetic and biomedical analysis on pathogenic fungi. Skills included the following: Construction and characterization of mutant fungal cell lines, performing bioassays for fungal susceptibility to various clinical antifungal drugs, and monitoring genome wide expression changes in response to antifungal treatment. Additional skills include isolation and handling of RNA, design and usage of Real-Time PCR technology. Supervised and trained laboratory personnel, speaker for departmental seminars and wrote peer review manuscript.

2004 – 2005      Hunter College, New York

#### **Course Coordinator and Adjunct Lecturer Introduction to Biomedical Research**

- Developed curriculum and gave lectures based on principles in Molecular and Cellular Biology and Microbiology. Also gave lectures focusing on current ethical issues associated with biomedical research. Designed, prepared, and instructed student lab exercises. Managed course budget.

2003 – 2004      Hunter College, New York

#### **Adjunct Lecturer Molecular Biology Laboratory**

- Supervised and instructed undergraduates in performing Molecular Biology exercises.

1997 – 2006 Hunter College, New York

**Undergraduate and Graduate Research Assistant, Dr. Peter Lipke Laboratory**

- Developed and performed Microbiological, Molecular Genetics, and Biochemical experiments. Skills included preparation of plasmid DNA vectors, DNA and protein purification and protein structural analysis, microscopy, fungal cellular adhesion bioassays, maintenance of fungal cell lines and experienced in various immunological-based bioassays. Supervised and trained lab personnel in assay design and conducting experiments. Wrote independently funded grant (NIH), peer-reviewed manuscripts, and gave oral presentations.

**Academic Appointments**

2009 – Present The Graduate Center (CUNY), New York

- Faculty member of the Biological Sciences Department Molecular, Cellular, and Developmental Division. Supervised graduate student research projects in fungal biomedical research. First level exam grader for graduate students and thesis committee member.

**Society Memberships**

- 2001 – Present, Member of the American Society for Microbiology (ASM)
- 2001 – Present, Member of the New York Academy of Sciences (NYAS)

**Awards and Professional Honors**

*John Jay College (CUNY)*

- 2014, Distinguished Service to Students Awardee
- 2014, Outstanding Scholarly Mentor Awardee
- 2010 - 2012, CUNY Salute to Scholars recipient
- 2010, Annual Biomedical Conference for Minority Students (ABRCMS) Judges' Travel Subsidy Awardee

*The Graduate Center (CUNY)*

- 2004, Recipient of the Beatrice Goldstein Konheim Graduate Scholarship in the Life Sciences
- 2003, Recipient of The Professor Serge N. Timasheff Award at the 2003 Colorado Protein Stability Conference
- 2001 – 2003, Minority Access/Graduate Networking in the Sciences, Engineering and Mathematics (MAGNET-SEM) and (AGEP) fellow
- 2001-2002, NSF/AGEP award recipient award# 140262-00 017810GSF22

*Hunter College (CUNY)*

- 1999 – 2000, Minority Biomedical Research Support (MBRS) scholarship recipient
- 1997 – 1999, Minority Access to Research Careers (MARC) undergraduate fellow

**Research Interests**

Research activities focus on fungal stress-signaling pathways and fungal adhesion mechanisms. Areas of expertise include fungal genetics, molecular biology and molecular genetics.

**Ongoing Research Support****National Institute of Health Score****NIH-SCORE: 1SC3-GM111133-01, \$470,688 awarded** 5/01/15 - 2/28/19

Pathogenic Yeast Stress Signaling Networks.

The major goal of this project is to characterize the signaling mechanisms underlying the yeast response to multiple stress inputs.

Role: PI

**National Science Foundation****NSF: DUE-1259769, \$632,174 awarded** 1/01/14 – 12/31/17

The John Jay Forensic Science and Computer Science Scholarship Program

Role: Co-PI

**PSC-CUNY Award # 68733-00 46 \$6,000.00 awarded** 7/01/15 - 6/30/16

Mechanisms of Ion Homeostasis in Yeast

Role: PI

**Previous Completed Grants****National Institute of Health Score****NIH-SCORE: SC2 GM089556-01, \$467,664.65 awarded** 2/01/10 - 1/31/13

Yeast cell wall damage response pathways.

The major goal of this project is to characterize the signaling mechanisms underlying the yeast cell wall damage to antifungal drugs.

Role: PI

PSC-CUNY Award # 66615-0044 \$6,000.00 awarded, Rauceo (PI) 7/01/13 - 6/30/14

PSC-CUNY: Grant # 65562-0043, \$6,000.00 awarded, Rauceo (PI) 7/01/12 - 6/30/13

PSC-CUNY: Grant # 63718-0041, \$2,900.00 awarded, Rauceo (PI) 7/01/10 - 6/30/11

PSC-CUNY: Grant # 60170-3940, \$4,050.00 awarded, Rauceo (PI) 7/01/09 - 6/30/10

National Institute of Health/National Institute of General Medical Sciences (NIH/NIGMS)

Ruth L. Kirschstein fellowship recipient. 9/01/03 - 2/01/06

NIH: F31 GM070122-021, \$80,334.00 awarded

Analysis of the *Candida albicans* adhesin Als5p.The major goal of this project was to determine role of the *C. albicans* adhesin, Als5p in adhesion and cellular aggregation to mammalian tissue components.

Role: CO-PI

**Service to the University**

2010 – 2011

- Member of CUNY-wide academic technology committee (CAT). Assessed performance of university information technology (CUNY Academic Commons) and policies regarding the role of technology and

faculty development. Proposed initiatives to improve university wide technology infrastructure.

### **Service to John Jay College**

2014 -2015

- Member of the *ad hoc* Strategic Planning Committee. Prepared, assessed and reviewed the College's strategic plan.

2014 - 2015

- Member of the Research Advisory Committee. Reviewed applications for the annual awards program. Organized events for the College's Office of Advancement of Research.

2014

- Member of the *ad hoc* mission statement committee. Prepared and reviewed College Mission Statement.
- Member of the *ad hoc* search committee for the Assistant Director of Sponsored Programs position.

2013 – Present

- Member of the College Honor's Program Committee. Reviewed applications for the Macaulay honors program. Hosted student tours of the Science department.

2009 – 2012

- Member of college-wide technology committee. Assessed performance of college information technology. Developed initiatives to improve college technology infrastructure.

### **Service to the Science Department**

2014

- Chair of the *ad hoc* science department self-study committee. Prepared, revised, and coordinated preparation of the self-study document for the forensic science undergraduate major.

2012 - Present

- Member of the *ad hoc* committee for the biology major and minor. Evaluated courses for the minor/major and co-authored the proposal and letter of intent for the minor/major.

2009 – Present

- Member of the curriculum committee. Evaluated science course curriculum. Analyzed college-wide general science requirements. Revised procedures for issuing grades to students.
- Member of the *ad hoc* faculty search committee. Reviewed applicant CVs for lecturer and professorial positions. Participated in interviews for selected candidates.
- Member of the department equipment committee.
- Member of the department student appeals committee.

### **Advisement**

2009 – Present

- Faculty mentor for National Science Foundation (NSF) scholarship recipients. Advised students on scholastic and research issues.

2011 – Present

- *Ad hoc* departmental advisor for Forensic Science Majors. Advised students on progress in the science major and assisted the registration process.

**Academic Activities**

2009 – Present

- Faculty mentor for The Program of Research Initiatives for Science Majors (PRISM) participants. Supervised and trained undergraduate students in fungal biomedical research. Organized and supervised laboratory training workshops for undergraduate students.

**Volunteer Work**

2014 – Present

- Faculty mentor for the Urban Barcoding Research Project. Supervised and trained high school students in DNA barcoding research for the Cold Spring Harbor/American Museum of Natural History mentoring program.

2010 – Present

- Poster presentation judge for the 2010 -2012 Annual Biomedical Research Conference for Minority Students (ABRCMS).
- Poster presentation judge for the 2010 undergraduate CSTEP scholars.

2001 – 2003

- Vice President of the Hunter College Graduate Student Association

**Presentations**

- The Yeast Chaperone Sse1 Plays a Novel Role in Processing Cell Wall Amyloid-Forming Adhesins. Abstract for poster presentation. 2014 Annual Biomedical Conference for Minority Students (ABRCMS).
- Construction and Functional Characterization of a Mutant Isoform of the *Candida albicans* Adhesin Als1p. Abstract for poster presentation. 2013 Annual Biomedical Conference for Minority Students (ABRCMS).
- Identification of a Chaperone Network for the *Candida albicans* Als Adhesins. Abstract for poster presentation. 2013 ABRCMS.
- Discovery of Newly Conserved Roles of the Yeast Transcription Factor Sko1. Abstract for poster presentation. 2012 ABRCMS.
- Role of *Candida albicans* Transcription Factor Sko1 in Combinatorial Stress Signaling. 2012 ABRCMS.
- Identification of Upstream Activators for Yeast Cell Wall Damage and Osmotic Stress Signaling. 2012 ABRCMS.
- Analysis of the *ALS1* Amyloid Forming Sequence in *Candida albicans*. Abstract for poster presentation. 2012 ABRCMS.
- Regulation of the Osmotic Stress Response by Transcription Factor Sko1. Abstract for poster presentation. 2012 American Society of Microbiology (ASM) Conference on Candida and Candidiasis
- Synthesis of *Candida albicans* *ALS1* Mutant Expression Vectors. 2012 15<sup>th</sup> Annual CUNY/AGEP STEM Conference.
- Control of the Cell Wall Damage Response by Transcription Factor Sko1 and Protein Kinase Psk1. Abstract for poster presentation. 2008 ASM Conference on Candida and Candidiasis.
- Threonine-Rich Repeats in Als5p Alter Structure and Function of the Binding Region, Abstract for poster presentation. 2006 ASM Conference on Candida and Candidiasis.
- Glycosylated Tandem Repeats in the *Candida albicans* Adhesin Als5p Affect Structure and Function, Abstract for poster presentation. 2005 Consortium on Functional Glycomics.

- Als5p Mediates Amyloid – Like Global Cell Surface Conformational Changes, Abstract for poster presentation. 2004 General Meeting for The American Society of Microbiology.
- Amyloid-Like Properties of the *Candida albicans* Adhesin Als5p, Abstract for poster presentation. 2003 Colorado Protein Stability Conference.
- Analysis of *Saccharomyces cerevisiae* Cell Wall Mutants. Abstract for poster presentation. 2002 General Meeting for The American Society of Microbiology.
- An Alternative Approach to Inducing Sterile Alpha-Cells of *Saccharomyces cerevisiae* to Mate. Abstract for poster presentation. 1998 Annual Biomedical Research Conference for Minority Students (ABRCMS)
- Efficient Methods of Quantitative Yeast Mating. Abstract for poster presentation. 1997 Annual Biomedical Research Conference for Minority Students (ABRCMS)

### Publications

1. Marotta, D.H., Nantel, A., Sukala, L., Teubl, J.T., **Rauceo, J. M** (2013). Genome-Wide Transcriptional Profiling and Enrichment Mapping Reveal Divergent and Conserved Roles of Sko1 in the *Candida albicans* Osmotic Stress Response. *Genomics*, (4) 363-37. **Data from this study was used as the journal's cover image**
2. Gonzalez, M., Goddard, N., Hicks, C., Ovalle, R., **Rauceo, J.M.**, Jue, C.K., and Lipke, P.N. (2010). A Screen for Deficiencies in GPI-Anchorage of Wall Glycoproteins in Yeast. *Yeast*. (8):583-96.
3. Ramsook, C.B., Tan, C., Garcia, M.C., Fung, R., Soybelman, G., Henry, R., Litewka, A., O'Meally, S., Otoo, H.N., Khalaf, R.A., Dranginis, A.M., Gaur, N.K., Klotz, S.A., **Rauceo, J.M.**, Jue, C.K., Lipke, P.N. (2010). Yeast Cell Adhesion Molecules have Functional Amyloid-Forming Sequences. *Eukaryotic Cell*. 3:393-404.
4. Frank, A.T., Ramsook, C., Otoo, H.N., Tan, C., Soybelman, G., **Rauceo, J.M.**, Gaur, N.K., Klotz, S.A., Lipke, P.N. (2010). Structure and Function of Glycosylated Tandem Repeats from *Candida albicans* ALS Adhesins. *Eukaryotic Cell*. 3:405-14. **Data from this study was used as the journal's cover image**
5. Arbour, M., Epps, E., Sellam, A., Lacroix, C., Tang, K., **Rauceo, J.**, Mitchell, A., Berman, J., Whiteway, M., Nantel, A. (2009). Widespread occurrence of chromosomal aneuploidy following the routine production of *Candida albicans* mutants. *Fems Yeast Res*. 7:1070-7
6. **Rauceo, J.M.**, Blankenship, J.R. Fanning, S., Hamaker, J.J, Smith, F.J, and Mitchell, A.P. (2008). Regulation of the *Candida albicans* Cell Wall Damage Response by Transcription Factor Sko1 and PAS kinase Psk1. *Mol, Biol Cell*. 7: 2741-2751.
7. Dranginis, A., **Rauceo, J.M.**, J. E. Coronado, J.E., and Lipke, P.N. (2007). A biochemical guide to fungal adhesins: Glycoproteins for social and antisocial occasions. *Microbiol Mol Biol Rev*. Jun;71(2):282-94.
8. **Rauceo, J.M.**, DeArmond, R., Otoo, H., Kahn, P.C., Klotz, S.A., Gaur, N.K., and Lipke, P.N. (2006). Threonine-Rich Repeats Increase Fibronectin Binding in the *Candida albicans* Adhesin Als5p. *Eukaryotic Cell*. 5:1664-1673.
9. Klotz, S.A., Gaur, N.K., Lake, D.F., Chan, V., **Rauceo, J.**, Lipke, P.N. (2004). Degenerate Peptide Recognition by *Candida albicans* Adhesins Als5p and Als1p. *Infect. Immun*. 72: 2029-2034.

10. **Rauceo, J.M.**, Gaur, N.K., Klotz, S.A., Lee, K.G., and Lipke, P.N., (2004). Global Cell-surface Conformational Shift Mediated by a *Candida* Adhesin. *Infect. Immun.* 72: 4948-4955.
11. Klotz, S.A., Gaur, N.K., **Rauceo, J.**, Lake, D.F., Park, Y., Hahm, K.S., and Lipke, P.N., (2004). A 23-mer Peptide (Fn/23) with Dual Antifungal Properties: Inhibition of Adherence and Killing of *Candida albicans*. *Antimicrobial Agents Chemother.*

### **Invited Seminars**

2014, Hunter College (CUNY), New York , NY

- Invited speaker for graduate seminar on biomedical research and career planning.

2013, University of Santo Tomas, Manilla, Phillippines

- Invited speaker for seminar on biomedical research.

2008, St John's University, New York, NY

- Invited speaker for graduate seminar on biomedical research.

### **Non Peer-Reviewed Booklet**

**Rauceo, J.M.** and Carpi A, (2011), **ISBN-10:** 1435766679, **ISBN-13:** 978-1435766679. Applications of Basic Chemical and Biological Principles in Forensic Science Investigations. Booklet disseminated to CUNY community college campuses.