

Eric A. Klein
Assistant Professor of Biology
Center for Computational and Integrative Biology
Rutgers University-Camden

CONTACT INFORMATION

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PROFESSIONAL EXPERIENCE

Rutgers University-Camden, Camden, NJ 2013-Present
Assistant Professor, Department of Biology and Center for Computational and Integrative Biology
Member of the Rutgers Microbial Biology Graduate Group

Princeton University, Princeton, NJ 2009- 2013
Post-doctoral fellow, Department of Molecular Biology; PI: Zemer Gitai

University of Pennsylvania, Philadelphia, PA 2008-2009
Post-doctoral researcher, Department of Pharmacology; PI: Richard Assoian

EDUCATION

PhD in Pharmacology, University of Pennsylvania, Philadelphia, PA.....December 2007
Thesis: Regulation of *cyclin D1* expression by Rac, the actin cytoskeleton, and extracellular matrix compliance
Advisor: Professor Richard K. Assoian
BS in Chemical Engineering, University of Pennsylvania, Philadelphia, PA.....May 2000
BA in Biochemistry, University of Pennsylvania, Philadelphia, PAMay 2000

HONORS AND AWARDS

Ruth L. Kirschstein National Research Service Award (NIH F32GM090684)..... 2010-2013
Pharmacology Department John O'Brien Award 2006
Appointment to Cell and Molecular Biology Training Grant, U. of Pennsylvania..... 2000-2002
Class of 1939 Graduate Fellowship, University of Pennsylvania..... 2000

SERVICE

PennPORT Advisory Committee 2016-present
Rutgers-Camden Title IX Team..... 2015-present
Rutgers-Camden Faculty Senate 2014-2016
Executive Committee, Center for Computational and Integrative Biology..... 2014-present

Rutgers University Institutional Biosafety Committee	2014-present
Health Sciences Major Advisory Committee.....	2013-present
Biology Undergraduate Committee	2013-present
Biology Graduate Committee.....	2013-present

TEACHING AND ADVISING

BIO399 Current Topics in Biology.....	2014
BIO341 General Physiology.....	2014-present
BIO342 General Physiology Laboratory.....	2014-present
BIO530 Molecular Carcinogenesis.....	2013-Present
Summer Academy in Applied Science and Technology, U. of Pennsylvania	2006
BIO045 Critical Reading of Scientific Literature, U. of Pennsylvania.....	2002-2003
BIO202 Cell Biology and Biochemistry, Teaching Assistant, U. of Pennsylvania	2001
MEAM333 Heat and Mass Transport, Teaching Asst, Mech. Engineering, U. of Pennsylvania	2000
CHE353 Advanced Chemical Engineering Science, Teaching Assistant, U. of Pennsylvania	1999

STUDENT MENTORSHIP

Undergraduate (10 total):

1. Matthew Ratti- **Grants:** NASA New Jersey Space Grant Consortium Academic Year Fellowship (2013; \$2000); Dean's Undergraduate Travel Award (Summer 2015; \$500); Dean's Undergraduate Research Grant (Summer 2015; \$500). **Awards:** Dean's Undergraduate Research Prize (2016).
2. Joseph Naddeo- **Grants:** NASA New Jersey Space Grant Consortium Academic Year Fellowship (2015; \$4000). **Awards:** Dean's Undergraduate Research Prize (2015).
3. Michael Bamimore- **Grants:** Arts and Sciences Dean's Research Grant (Spring 2015; \$500); American Society for Microbiology Undergraduate Research Fellowship (Summer 2015; \$4000 stipend; \$1000 travel to ASM 2016 meeting); Arts and Sciences Dean's Research Grant (Spring 2016; \$500).
4. Kevin de Young- **Awards:** Sandy Stewart Undergraduate Research Scholarship (2016-2017)

Graduate: (2) Master's and (2) Ph.D. students

INVITED RESEARCH TALKS

Biology Department, Villanova University.....	2017
CCIB Retreat, Rutgers University-Camden.....	2016
Biology Department, Hofstra University	
Session chair, Gordon Conference on Bacterial Cell Surfaces, Mt. Snow, VT	
Molecular Biology Department, Rowan SOM	
Microbiology Department, Pearson Lab Meeting, New York University	
Gordon Conference on Microbial Adhesion and Signal Transduction, Newport, RI.....	2015
Bacteria Club Seminar, Stanford University	
Microbiology Department Seminar, University of Pennsylvania	

SEBS/CCIB Retreat, Rutgers University-Camden Rutgers Microbiology Symposium, New Brunswick, NJ Molecular UTI Conference, Malmo, Sweden	2014
Biology Department Seminar, Rutgers University-Camden Glenn Minisymposium on Aging, Princeton University	2013
Biology Department Seminar, Rutgers University-Camden Center for Computational and Integrative Biology, Rutgers University-Camden Biology Department Seminar, Georgetown University American Society for Cell Biology, Philadelphia, PA.....	2010
Zing Bacterial Cell Biology Conference, Playa del Carmen, Mexico EMBO Workshop on Sys. Dynamics of Intracellular Comm., Maale Hachamisha, Israel.....	2007

PEER-REVIEWED PUBLICATIONS (*= co-first author, %=undergraduate, \$=graduate student)

1. Ratti. M.%, Naddeo, J.J.%, Griepenburg, J.C., O'Malley, S.M., Bubb, D.M., **Klein, E.A.** Production of metal nanoparticles by pulsed laser-ablation in liquids: a tool for studying the antibacterial properties of nanoparticles. *Journal of Visualized Experiments*, in press.
2. Ratti. M.%,*, Naddeo, J.J.%,*, Griepenburg, J.C., Tomko, J.%, Trout, C.%, O'Malley, S.M., Bubb, D.M., **Klein, E.A.** Irradiation With Visible Light Enhances the Antibacterial Toxicity of Silver Nanoparticles Produced by Laser Ablation. *Applied Physics A* (2016), 122:346.
3. Moorthy, S., Keklak, J.\$, **Klein, E.A.** Perspective: Adhesion Mediated Signal Transduction in Bacterial Pathogens. *Pathogens* (2016), 5(1):23.
4. Naddeo, J.J.%,*, Ratti, M.%,*, O'Malley, S.M., Griepenburg, J.C., Bubb, D.M., **Klein, E.A.** Antibacterial properties of nanoparticles: a comparative review of chemically synthesized and laser-generated particles. *Advanced Science, Engineering, and Medicine* (2015), 7(12):1044-1057.
5. **Klein, E.A.***, Schlimpert, S.*, Hughes, V., Brun, Y.V., Thanbichler, M., and Gitai, Z. Physiological role of stalk lengthening in *Caulobacter crescentus*. *Commun Integr Biol* (2013), 6:e24561.
6. **Klein, E.A.** and Gitai, Z. Draft genome sequence of uropathogenic *Escherichia coli* strain J96. *Genome Announc.* (2013),1(1):e00245-12.
7. Schlimpert, S.*, **Klein,E.A.***, Briegel, A., Hughes, V., Kahnt, J., Bolte, K., Maier, U.G., Brun, Y., Jensen, G.J., Gitai, Z., and Thanbichler, M. General Protein Diffusion Barriers Create Compartments within Bacterial Cells. *Cell* (2012), 151(6):1270-82.
8. Levental, I., Levental, K.R., **Klein, E.A.**, Assoian, R.K., Miller, R.T., Wells, R.G., and Janmey, P.A. A simple indentation device for measuring micrometer-scale tissue stiffness. *J. Physics: Condensed Matter* (2010), 22(19): 194120.
9. **Klein, E.A.**, Castagnino P., Yin, L., Byfield, F.J., Kothapalli, D., Xu, T., Levental, I., Hawthorne, E., Janmey, P.A., and Assoian, R.K. Cell cycle control by physiological matrix elasticity and *in vivo* tissue stiffening. *Current Biology* (2009), 19(18):1511-8.
10. Cerezo, A., Guadamillas, M.C., Goetz, J.G., Sanchez-Perales, S., **Klein, E.A.**, Assoian, R.K., and del Pozo, M.A. Absence of caveolin-1 increases proliferation and anchorage independent growth by a Rac-dependent, Erk-independent mechanism. *Molecular and Cellular Biology* (2009), 29(18):5046-59.

11. **Klein, E.A.**, Campbell, L.E., Kothapalli, D., Fournier, A.K., Assoian, R.K. Joint requirement for Rac and ERK activities underlies the mid-G1 phase induction of cyclin D1 and S phase entry in both epithelial and mesenchymal cells. *J Biol Chem* (2008), 83(45):30911-8.
12. Yang, C., **Klein, E.A.**, Assoian, R.K., Kazanietz, M.G. Heregulin beta1 Promotes Breast Cancer Cell Proliferation through Rac/Erk-dependent Induction of Cyclin D1 and p21 Cip1. *Biochem J* (2008), 410(1):167-75.
13. Assoian, R.K. and **Klein E.A.** Growth control by intracellular tension and extracellular stiffness. *Trends Cell Biol* (2008), 18(7):347-52.
14. **Klein, E.A.** and Assoian, R.K. Transcriptional regulation of the cyclin D1 gene at a glance. *J Cell Sci.* (2008), 121(23):3853-7.
15. **Klein, E.A.**, Yang, C., Kazanietz, M.G., Assoian, R.K. NFkappaB-independent signaling to the cyclin D1 gene by Rac. *Cell Cycle* (2007), 6(9):1115-21.
16. **Klein, E.A.**, Yung, Y., Castagnino, P., Kothapalli, D., Assoian, R.K. Cell adhesion, cellular tension, and cell cycle control. *Methods Enzymol* (2007), 426:155-75.
17. Zhao, L., Cuff, C.A., Moss, E., Wille, U., Cyrus, T., **Klein, E.A.**, Praticò, D., Rader, D.J., Hunter, C.A., Puré, E., Funk, C.D. Selective interleukin-12 synthesis defect in 12/15-lipoxygenase deficient macrophages associated with reduced atherosclerosis in a mouse model of familial hypercholesterolemia. *J Biol Chem* (2002), 277(38):35350-6.

CURRENT FUNDING

NSF MCB-1553004 (1/16-12/20)

Role: PI

“CAREER: Composition, mechanical properties, and synthesis of the *Caulobacter crescentus* stalk”

NSF CMMI-1531783 (8/15-8/17)

Role:Co-PI

“MRI: Acquisition of a femtosecond laser system to enable multiphoton polymerization, photoporation, and laser ablation in liquids research”

Busch Biomedical Research Grant (8/15-7/17) Role: PI

“Laser ablation synthesis of nanoparticles: innovations for antibiotic development”