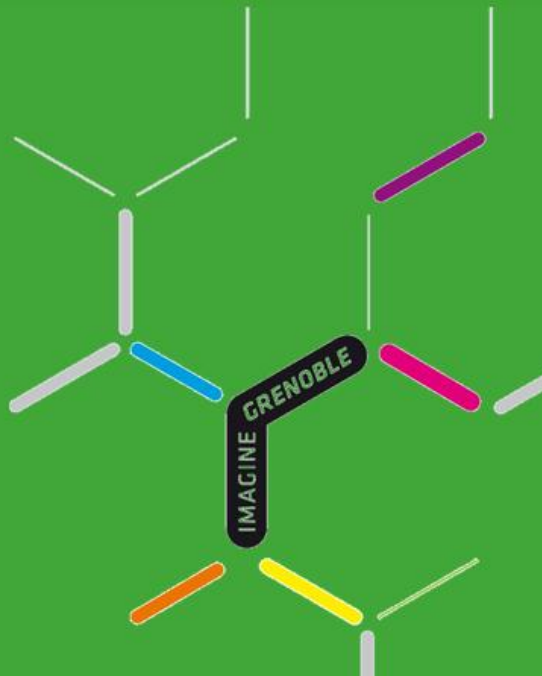
GIANT

INNOVATION CAMPUS

Grenoble Innovation for
Advanced New Technologies

French-American Workshop
– June 19-20, 2014
1 minute for 1 researcher



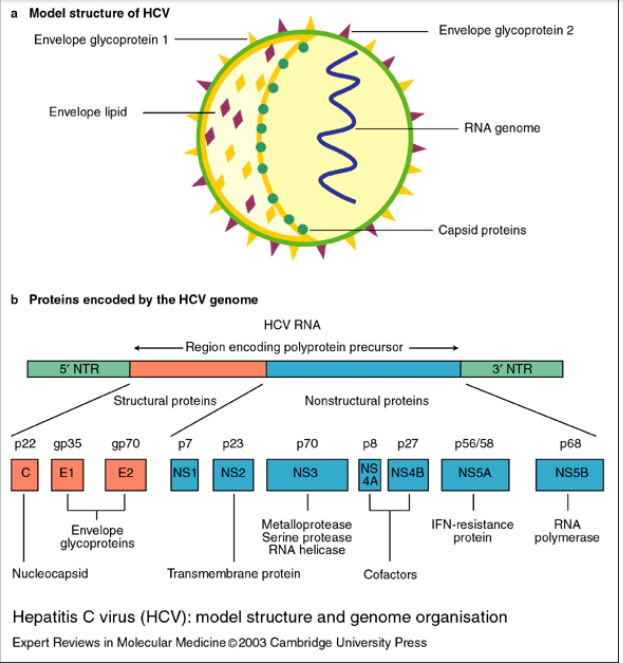
Allison R. Smither

B.S. Biochemistry, Louisiana State University (2015)

Three HHMI-funded research internships

Presented research at several international conferences

Intend to peruse a PhD in biomedical sciences



Hepatitis C virus (HCV): model structure and genome organisation

Previous research:

- Human placental fatty acid transfer in women with gestational diabetes mellitus
- Genetic effects of neural tube development in mice

Current research:

- Characterizing several steps of the HCV lifecycle
  - Viral entry (CD81 and other tetraspanins)
  - Viral replication (NS5A and NS5B)

Dhruv R. Seshadri

drs117@case.edu

Case Western Reserve University est 1826

Graduated Spring 2014
B.S. Polymers Science and Engr

Summer Internships + Research

TEXAS A&M UNIVERSITY

Starting Fall 2014
PhD Biomedical Engineering

Summer Internships

→ Dept. of Energy SULI Program at Lawrence Berkeley National Laboratory, Lithium-ion Batteries (2012 & 2013)

→ Bharat Biotech Lmt, Hyderabad, India. Pharma Industry (2011)

Proudest Accomplishment

→ Being able to do my part in helping revamp a community near downtown Cleveland. Responsibilities included networking with city officials to help initiate programs and businesses to grow the neighborhood.

Research at Case Western (Dr. Gary Wnek)

→ Electrospinning of naturally derived polymers for therapeutic applications

→ Drug delivery of such therapeutic agents encapsulated in the nanofibers for applicatons such as anti-fungal treatment, macular degeneration, etc.

Research at CEA Grenoble (Dr. Renaud Dumas and Dr. Patrice Rannou), Summer 2014.

→ Protein nanotubes for opto-electronic applications

→ Insertion of chromophore into nanotube to detect and measure amount of light released

Emilie Bulard, PhD in Physics (2012, Université Paris XI, France)

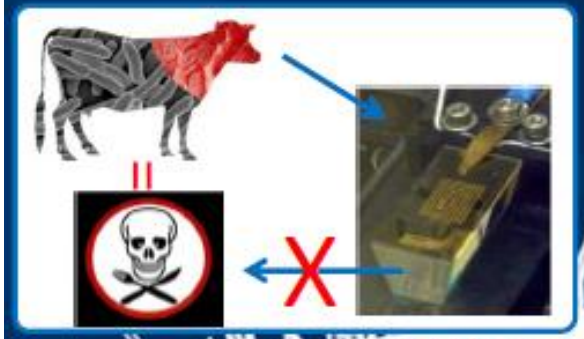
RESEARCH PROJECTS

New design of antimicrobial surfaces

2009-2012: ISMO, Paris XI

Effect of bacterial adhesion onto self-assembled monolayers by **SFG** (Sum Frequency Generation) spectroscopy.

4 publications, **6** oral communications



2013-2015: INAC/SprAM/CREAB

Detection and discrimination of pathogenic bacteria onto carbohydrate microarray by **SPR** (Surface Plasmon Resonance).

1 publication

Early detection of pathogenic bacteria in food

Optic
Microbiology
Chemical synthesis

March 2015: I am available for work!

emilie.bulard@cea.fr

Jorge M. Herrera

B.S. 2010, Kyushu University - Japan
Ph.D. Candidate 2015, CEA-Leti
Field: Biomaterials
Advisor: François Berger

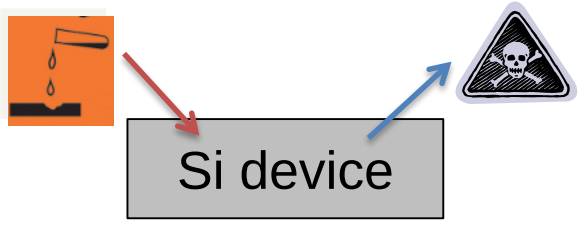
Thesis Topic: Biocompatible and hermetic packaging of microsystems for the fabrication of smart medical devices

Publications and Presentations:

- J.M. Herrera, J-C Souriau, D. Ratel, G. Simon, and F. Berger, in *Proc. of IEEE 64th Electronic Components and Technology Conference (ECTC)*, Orlando, USA, May 27-30, 2014.
- Y. Shiota, J. M. Herrera, G. Juhász, T. Abe, S. Ohzu, T. Ishizuka, T. Kojimi, and K. Yoshizawa, *Inorganic Chemistry*, **50**, 6200-6209 (2011).

Awards and Honors:

- Erasmus Mundus Scholar (EU) 2010-12
- Monbukagakusho Scholar (Japan) 2005-10



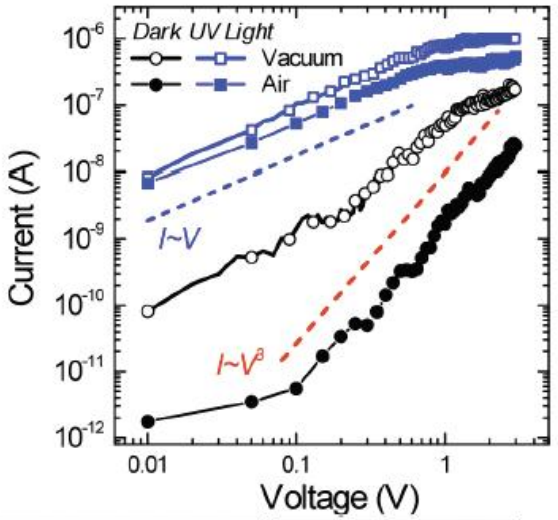
ROBERT ROHLI

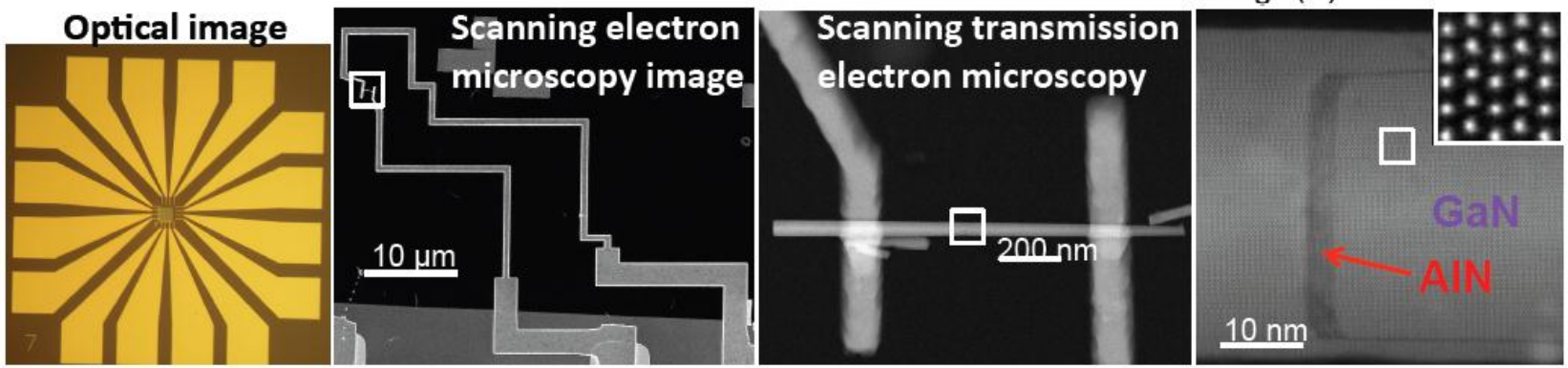
- Geographer-climatologist, Louisiana State University
  - Atmospheric circulation variability; physical geography
- Coordinator, Louisiana Geographic Education Alliance
  - Promote geography education in Louisiana
- Faculty Director, Louisiana State University Residential Colleges Program
  - Coordinate academic curricula and co-curricular programs for students who live in campus residence halls

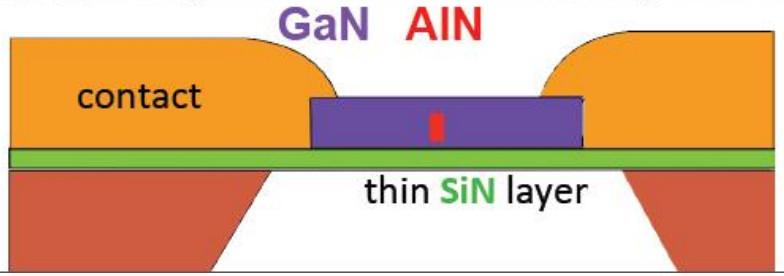
Correlation of optical & electrical properties with Transmission Electron Microscopy (TEM) on the same nanowire

Martien den Hertog (CNRS)
martien.den-hertog@neel.cnrs.fr

Example: connected **GaN** nanowire with **AlN** insertion
- photocurrent
- scanning transmission electron microscopy







INSTITUT NANOSCIENCES ET CRYOGÉNIE

Minatec


Pierce Oeflein
Born in Spokane, Washington
Attends University of California, Berkeley
Studies Electrical Engineering & Computer Science, Philosophy
Past Work: Micro-Electro-Mechanical Systems (MEMS)
Current Work: Tunneling Field Effect Transistors (TFET)
Activities:
Co-founder of Billiards@Berkeley
Intramural Basketball
Bodhisattva of the Sigma Phi Society
Eagle Scout
QUEST Scholar
Alumni Association Leadership Award
"Those who flow
As life flows
Know
They need
No other
Force."
-Lao Tzu

Monica Trejo

Bachelor of Science in Chemistry
Alumni at California State University of Stanislaus

At present: University of Joseph Fourier
Département de Chimie Moléculaire, Grenoble, France

Research within the Chimie Inorganique REdox Group (CIRE) of DCM

- Photo- and electrocatalytic reduction of CO_2 on molecular metal complex catalysts based =>valorizing and recycling waste CO_2
- For instance reduction produces CO from CO_2 has proven to be highly useful in industrial processes (ex. one components of syn-gas)
- This type of research conducted will involve different aspects of this field related in the synthesis of molecular catalytic systems, characterization and in testing these new metallic complexes for their activity towards CO_2 reduction

Most Recent Research Project in the *Alemán Group*
California State University of Stanislaus (September 2012 – May 2014)

Purpose: study the photophysical characterization and solvent effect on the tautomerism of free-base corrole

Alexis C. Boulter

- **Research Experience**
  - University of Florida- Evolutionary Genetics
    - Interaction of Alu Polymorphisms with Hypertension in African-Americans in the Context of Discrimination
    - Presented posters at UF's CASE Conference (placed 3rd) and the AAPA conference in Calgary, Canada
  - Pasteur Institute, Lille- Immunology/ Metabolism
    - Exploration of the Mechanism and Origin of Psoriasis in Human Tissue and Mouse Model

- **Achievements and Work Experience**
  - Howard Hughes Medical Institute's Undergraduate Research Grant Recipient
  - Florida Department of Health's SOS initiative for HIV/ STD awareness and community outreach
  - Certified HIV Counselor and Instructor for Dance Therapy Class for Patients with Parkinson's Disease

B.S. in Biomedical Sciences, Minor in Dance

Hometown: Jacksonville, Fl

Achievements:
Graduated with a B.S in Chemistry from Xavier University, May 2014
Two publications in the undergraduate journal of chemistry research

Current Research: Synthesizing inhibitors of the YAP-TEAD 4 complex

Hobbies: Collecting shoes, basketball and shopping

Institut Pasteur de Lille

Xavier University of Louisiana

NSF

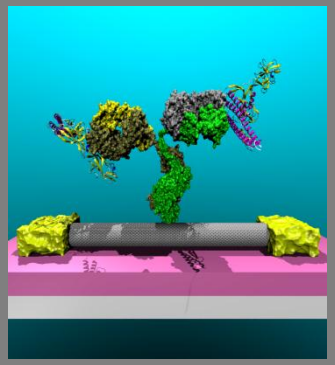
Erika McClain

Xavier University

Alexander Hunt IV

- Hometown: Susquehanna Township a suburb of Harrisburg, PA
- Education: Junior in the Undergraduate Materials Science and Engineering Major at the University of Pennsylvania

- Recreation: Member of Penn's Club Golf Team
- Traveling: Picture was taken at the Roman Amphitheater in Nimes, France



NSF Funded Summer of 2013 REU at UPenn

- Research Topic: Cysteine-mediated linkage between CNTs and Disease Biomarker Proteins
- Supervising Lab: Professor Charlie Johnson's Experimental Nanoscale Physics Group

GIANT Summer of 2014 Research in Grenoble

- Research Project: Fabrication of Carbon Nanostructured Bioelectrodes for Biosensing and Bioenergy Conversion
- Supervising Lab: Biosystems, Electrochemistry and Analytics (BEA) Group
- Supervisor: Dr. Michael Holzinger

GRENOBLE 1 UNIVERSITE JOSEPH FOURIER SCIENCES.TECHNOLOGIE.SANTÉ

GIANT INNOVATION CAMPUS

JUGNARAIN Vinesh Mervyn

Born in Seychelles; Grew up in Mauritius

From the University of Witwatersrand (Johannesburg, South Africa)

- BHSc (Hons.) in Health Sciences, Medical Cell Biology
- Currently; Msc in Molecular Medicine and Medical Biochemistry
- Dealing with HIV Pathogenesis and Therapeutics:
  - Recombinant Protein Expression, Structural/Functional Charaterisation, Antibody production, Redox Studies…

N. Cerutti, M. Killick, V. Jugnarain, M. Papathanasopoulos, A. Capovilla ***"Disulfide Reduction in CD4 Domain 1 or 2 Is Essential for Interaction with HIV glycoprotein 120 (gp120), which Impairs Thioredoxin-driven CD4 Dimerization"*** The Journal of Biological Chemistry, 2014

David Odenheimer

Goals:

- MD/PhD.
- Biological research and medical practice.

Research:

- Nucleolar stress in *Drosophila melanogaster*.
- Lung infection and innate immunity.

Hobbies:

- Chemistry demos.
- Guitar.
- Piano.
- Travel.

KATIE HUANG

Louisiana State University Senior majoring in Biochemistry and minoring in Chemistry and Chinese
Hometown: Ocean Springs, Mississippi
Hobbies: Ultimate frisbee, playing the ukulele, singing, hiking

Research interests: neuroscience, immunology, cellular biology

Current Research Projects

- **The Pasteur Institute** The effects of overexpression of G-coupled protein receptor 111 on amyloid plaque protein metabolism
- **LSU** Localization of gonadotropin-releasing hormone neurons in the brain of the American alligator

Previous Research Projects

- **LSU** Localization of Paternally expressed gene 3 and the effects of a high sodium diet in the hypothalamus in rats
- **Colorado State University** Optically measuring temperature in the field of a microscope

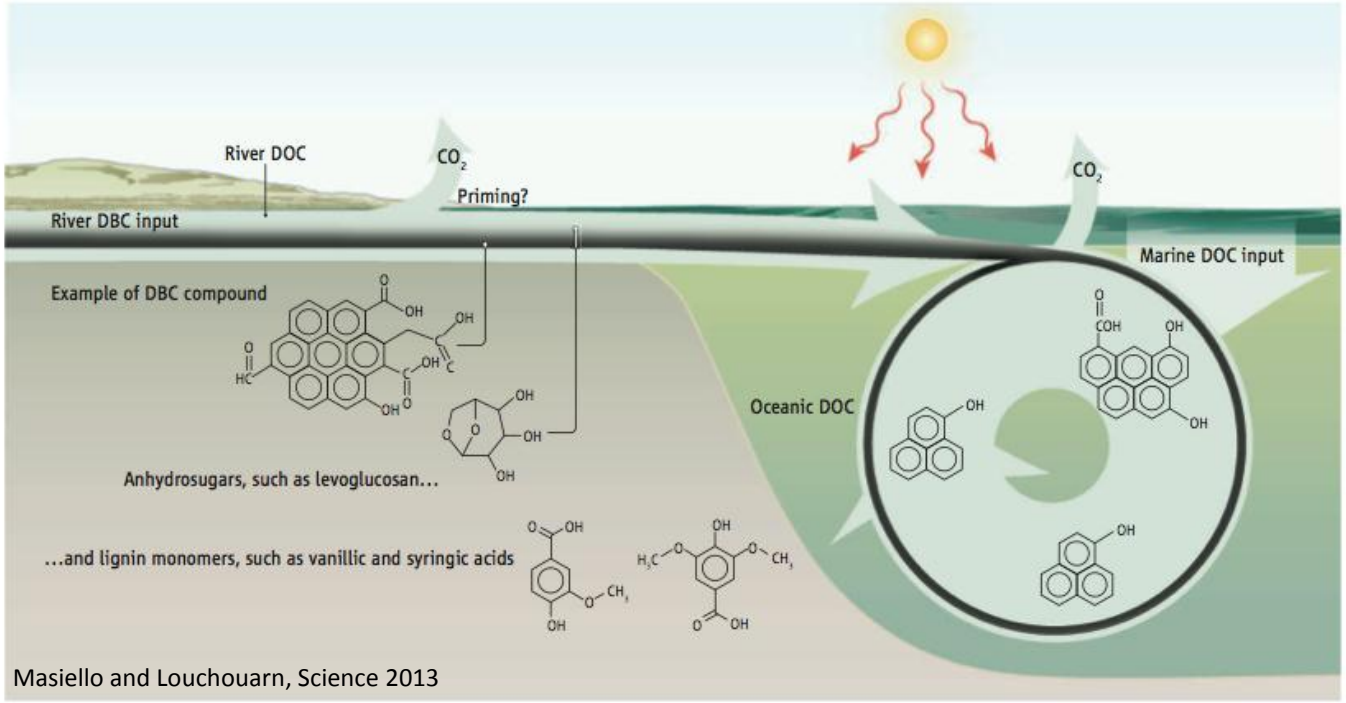
TEXAS A&M UNIVERSITY

EcoLab
Laboratoire écologie fonctionnelle et environnement

Allison Myers-Pigg

Chemical Oceanography PhD Student
Texas A&M University
Chateaubriand Fellow at EcoLab- INP Toulouse

How does fire affect carbon cycling on the ecosystem level?



Masiello and Louchouarn, Science 2013

Dissertation Topic: **Characterization of the impact of extreme physical and chemical processes on terrestrial organic matter and its fate in Arctic Rivers**

JACINTO S. DE LA CRUZ

- Research Experience:

1. Currently working at the Institut Pasteur de Lille under the supervision of Dr. Oleg Melynk. Where we are interested in the study and synthesis of cyclic peptides by means of SEA chemistry.

1. Undergraduate researcher at SJSU under the supervision of Dr. Marc d'Alarcao (2 years). Here, I focused on the synthesis of carbohydrates as potential therapeutics.

1. Summer 2013 internship at Chiang Mai University in Thailand under the supervision of Dr. Jaroon Jakmunee (6 weeks). We used electrochemistry to evaluate water quality from around the country.

To watch her video: https://www.youtube.com/watch?v=GeC0tvDIub8

Jonathon Watson

- Education: Senior Chemistry ACS major/Math minor - Class of 2015 (Xavier University of Louisiana)
- Research and Experience:
  - Xavier University of LA PREM (student researcher, Aug. 2010-present)
  - New York University (PREM REU, summer 2011)
  - University of Minnesota (MRSEC REU, summer 2012)
  - Professional Organic Chemistry Tutor (2012-Present)
- Current Work: CEA/INAC – Platinum-free Catalysis of Hydrogen Reduction/Oxidation for use in Energy Storage
- Post-Graduation Plans:
  - Graduate School: pursuit of PhD in Chemistry/Materials Science
  - Research in application: Solution for challenges in energy production, fabrication of better electronic devices, reduction in carbon footprint

Rosalyn V. Kent

- Hometown: Memphis, Tennessee

- B.S. 2013, Xavier University of Louisiana
  Department of Chemistry
  Advisor: Florastina Payton-Stewart

- Ph.D. Student, University of Michigan Ann Arbor
  Field: Chemical Biology

Awards and Honors:

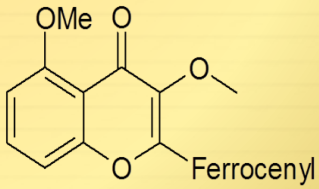
- U-M Rackham Science Award, 2014-2019
- NSF iREU Fellowship, 2014
- EDEB Fellowship, 2012-2014
- Graduate with Honors, Xavier University of Louisiana, 2013
- XULA Academic Scholarship, 2009-2013

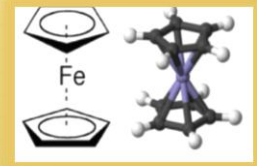
NIWA SARAFINA COLEMAN

Spelman College, Atlanta GA
Candidate of Bachelor of Science in Chemistry
Class or 2015

Researcher at Université Joseph Fourier de Grenoble
Pharmacie Département de Pharmacochimie Moléculaire

Collateral Sensitivity of Resistant MRP1-Overexpressing Cells to Flavonoids and Ferrocene Derivatives through GSH efflux.





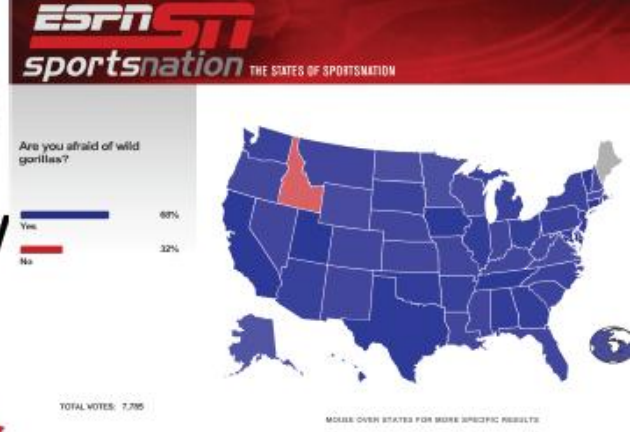
Graduate School: pursuit of PhD in Toxicology

Interest: Philanthropy, Zumba, Sand Boarding, Interior Design, Netflixing

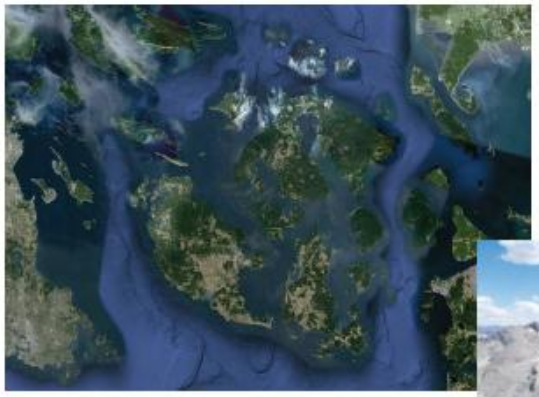
Hannah E. Marx

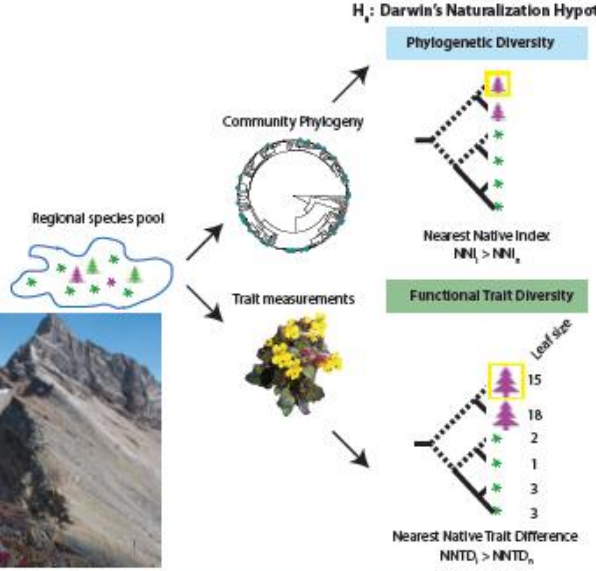
PhD Candidate, 3rd year
Bioinformatics & Computational Biology
University of Idaho
Hometown: Vancouver, Washington

Dr. David Tank (U. Idaho – USA)
Dr. Sébastien Lavergne (CNRS – France)



Dissertation research: Integrating phylogenetic, functional trait, and transcriptome diversity to understand community assembly on islands





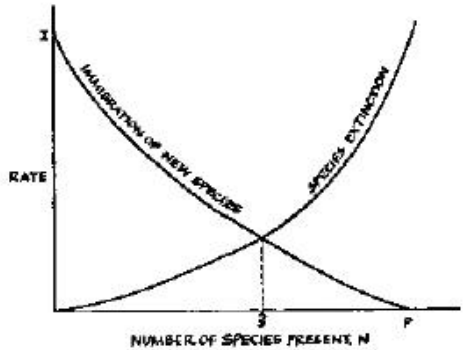


FIGURE 7. Equilibrium model of a biota of a single island. The equilibrial species number is reached at the intersection point between the curve of rate of immigration of new species, not already on the island, and the curve of extinction of species from the island. (After MacArthur and Wilson, 1963.)

Figure 1 (from MacArthur and Wilson 1967)

ibest

LECA Laboratoire d'Ecologie Alpine

NSF

Chateaubriand Fellowship Program
Embassy of France in the United States

Baher Mawlawi

Engineering Diploma with honors, 2012, Lebanese University.
M.Sc. with honors, 2012, Supélec, Paris, France.
Ph.D. Candidate, 2015, CEA-Leti / INSA Lyon, France.

Field: Telecommunications

Advisors: Jean-Baptiste Doré (CEA-Leti)
Jean-Marie Gorce (INSA Lyon / Princeton University)

Current Work:
Design of opportunistic MAC layer dedicated for TVWS applications.

Grant:

COST Action IC 0902, Best tutorial days participant, 11-13 February 2013, Castelldefels-Barcelona, Spain.

Publications:

Baher Mawlawi and Jean-Baptiste Doré, "CSMA/CA Bottleneck Remediation In Saturation Mode With New Backoff Strategy", 6th International Workshop on Multiple Access Communications, 16-17 December 2013, Vilnius, Lithuania.

Baher Mawlawi, Ejder Bastug, Chahé Nerguizian, Sylvain Azarian and Mérouane Debbah, "Non-Invasive Green Small Cell Network", Asilomar, 2012, California, USA.

Alexandra Churikova

MIT Class of 2016, B.S. in Physics

Massachusetts Institute of Technology

Intern at Institut Néel, CNRS Grenoble

Magnetic domain walls simulation, June–August 2014

R&D Intern at EDF Clamart AMA Group

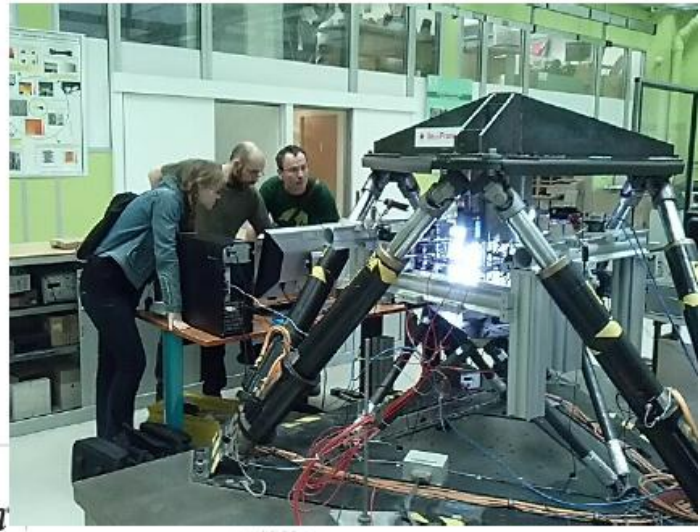
Damage propagation in concrete simulation, May–Aug 2013

Experimental Researcher at MIT Allanore Lab

January 2014 –

Researcher at MIT Thompson Lab

Sept 2012–May 2013



Français

English

Русский

MATLAB

python

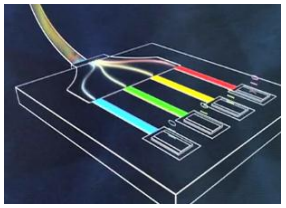
Wolfram Mathematica

Code_Aster ProNet

MURJ Journal

Manan Raval

Research Focus: Photonics and Optoelectronics



Education

- BS in Electrical Engineering from the University of Illinois at Urbana-Champaign (May 2014)
  - Undergraduate researcher in Photonic Systems Laboratory (PI: Dr. Lynford Goddard)
  - Projects included *Pd-based Fabry-Pérot H_2 sensor* and *III-V semiconductor slot waveguide design* (NSF Funded)
- MS/PhD in Electrical Engineering at MIT (starting Fall 2014)
  - Research Assistant in Photonic Microsystems Group (PI: Dr. Mike Watts)
- National Defense Science & Engineering Graduate (NDSEG) Fellow

Internships

- Lawrence Livermore National Laboratory (PI: Dr. Tiziana Bond) – Summer 2012
  - *Wavelength modulation spectroscopy for O_2 sensing*
- MIT Lincoln Laboratory (PI: Dr. Gary Smith) – Summer 2013
  - *Characterization of high power slab-coupled optical waveguide lasers (SCOWLs)*
- IMEC (PI: Dr. Dries Braeken) – Summer 2014
  - *Characterization of optical waveguides for optogenetic stimulation*
  - Funded by NSF

Lindsay Stanford

Senior Biology Major

Spelman College
Atlanta, GA, USA

Research Interests

Immunology

Microbiology

Proteomics

Research Experience

Summer 2014: GIIP- GIANT-CEA- BCI-IRTSV
Academic Year 2011-2014: MBRS-RISE Academic Development Program, Morehouse School of Medicine
Summer 2013: Albert Einstein College of Medicine Summer Undergraduate Research Program
Summer 2012: University of Washington Genome Sciences Summer Undergraduate Research Program

Publication

Aguilar,J.,Varshney, A.,Wang, X., **Stanford, L.**, Scharff, M., Fries, B. "Detection and Measurement of Staphylococcal Enterotoxin-like K (SEl-K) secretion by Staphylococcus aureus clinical isolates" *Journal of Clinical Microbiology* (2014)

Cody Nicole Leegwater

Hometown: Oakland, NJ

Home Institute: Louisiana State University

Major: Chemistry with a concentration in Biological Chemistry

Current Research at CEA-INAC: Functionalization of the surface of silicon electrode nanostructures by grafting redox groups for micro-supercapacitors

Past Research at LSU: Nanostructures of organosilanes prepared on Si(111) using particle lithography: Characterizations with atomic force microscopy

LSU
LOUISIANA STATE UNIVERSITY

INAC
INSTITUT NANOSCIENCES ET CRYOGÉNIE

Immanuel David MADUKAUWA-DAVID

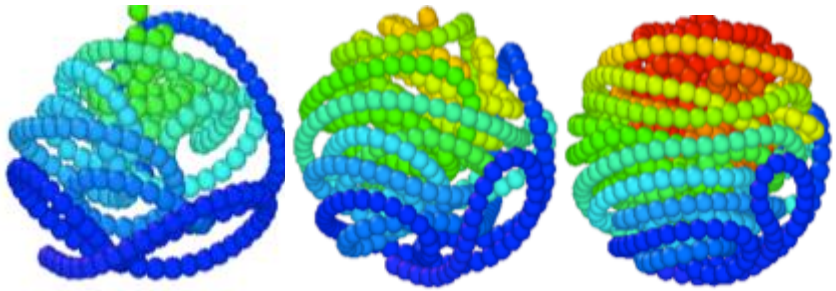
- Intern at INAC, B.Sc in Mechanical Eng. (MIT '14)
- Research Areas/Experience
  - Zinc oxide nanowire growth/characterization (MIT '13/14)
  - Heat transfer analysis in bubble columns (MIT '13)
  - Thermal system modeling (EDF '12)
  - Airport energy consumption modeling (Airbus '13)
- Current research

  Silicon nanowire- and nanotree-based supercapacitors
- Future plan:

  Masters leading to PhD at Columbia U (fall '14) - Nanofabrication

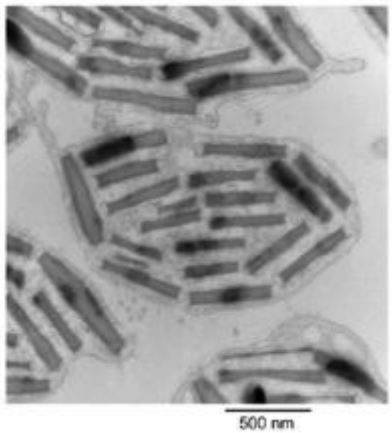
Eric Rosenthal

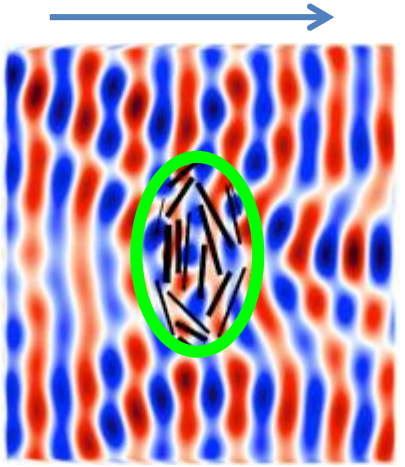
University of Pennsylvania, Physics, from *Syracuse* NY



- ***Summer 2014:* DNA packing, *Marc Joyeux and Sara Jabbari-Farouji***
- Current: Optics of fish skin, A. Sweeney group, UPenn
- Summer 2013: DFT on boron clusters, P. Pochet group, CEA
- Summer 2012: Phonons in carbon nanotubes,

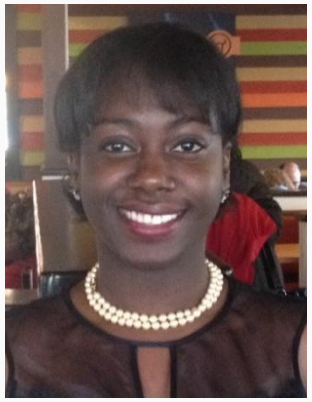
  R. Saito group, Tohoku U.





Skin cell and optical model

Publication: A. R. T. Nugraha, **E. I. Rosenthal**, E. H. Hasdeo, G. D. Sanders, C. J. Stanton, M. S. Dresselhaus, and R. Saito. *Phys. Rev. B* , 88:075440, Aug 2013.



Dara Bobb-Semple

- Born: Guyana (not Ghana), South America
- Graduated: Stony Brook University (summa cum laude)

  B.S. Chemistry, 2013
- Previous Research Experience: Nanotechnology for energy and biological applications
- Current Research: imec (Belgium) with Dr. Dries Braeken and Jordi Cools -Design and fabrication of multi-electrode array devices for detecting cell activity
- Future Plans: National Science Foundation fellow at Stanford University – PhD, Chemical Engineering

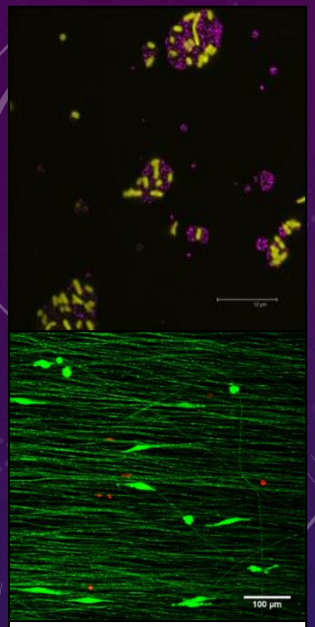
http://placesbook.org/guyana/guyana-map

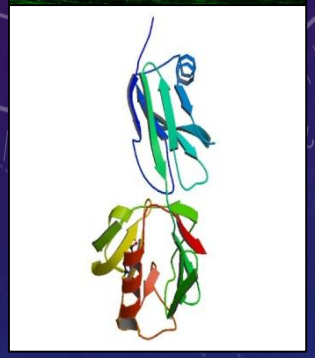
http://www.wpmap.org/ghana-map-africa/

Stony Brook University

imec

http://en.wikipedia.org/wiki/2014_FIFA_World_Cup





KATIE HOGAN

LOUISIANA STATE UNIVERSITY

MAJOR: BIOLOGICAL ENGINEERING

MINORS: CHEMISTRY, BIOLOGY

KHOGAN6@LSU.EDU

Population: about 845

Hometown: Choudrant, LA
Research: Theranostic nanoparticles, bone scaffolds, breast cancer cell migration, protein NMR

Katelyn Jackson

- Hometown: Denham Springs, Louisiana
- Education:
  - Senior at Louisiana State University
  - Studied Abroad at the University of Sussex
- Course of Study:
  - B.S. in Biological Sciences
  - B.A. in English Literature
- Research:
  - Honors Thesis Research at LSU Biology Dept. Advisor: Dr. Vince LiCata
  - Summer Internship at IBS Advisor: Martin Blackledge
- Hobbies: Dance and Color guard Instructor and Performer, Horseback Riding, Art, Writing, and Travel




Alexis Hibbler

I am a 3rd year Physics undergraduate student at the Massachusetts Institute of Technology.

Simulation and Analysis of Boron Cages

Definition of research goals

- Using BigDFT software, which computes the complex DFT calculations, I am analyzing the B38 molecule. B38 is especially interesting because it has 4 unfilled hexagons that all lie on the same axis of the cage which makes the structure unusually stable. Boron itself is an interesting element to work with because it is electron deficient so it forms multi-center bonds which leads to many Boron structures having the characteristic of aromaticity, which makes some boron structure unusually stable.

- Main achievements

- Hopefully, though rigorous analysis of many difference types of Boron cages, we can show definitively that the cages are energetically favorable enough to be synthesized in a a lab.

With the synthesis of Boron cages, there will be an influx of applications in the fields of nanostructures and nanotechnology.

Why is this research important?

- Before carbon fullerenes were synthesized in 1985, they were theoretically predicted in the early 1970's. The literature on carbon fullerenes helped to guide researchers who hoped to carry out a successful synthesis of the structures.

That is why studying and understanding the structure of boron fullerenes is an important step in being able to synthesize them. Boron also has several characteristics that makes the synthesis of Boron fullerenes particularly attractive, but also very difficult. The B80 fullerene is just one Of several structure that is energetically favorable. It is often hard to ensure the synthesis of purely cage-like structure, when clusters Inhabit the same configuration space and are as energetically or more energetically favorable than cage-like structures.

My skills

- Basic Python skills
-Experienced in Lunx systems
-Familiar with BigDFT software, V_Sim and Wannier90
- Good goal management and independent work ethic
- Considerable teaching experience from past jobs as a Physcis teacher's assisstant, English teacher, math tutor, and mentor

Career plans

- My expectations for this project are that I learn how to better use the Linux system, which is a common OS for many research institutions, that I have a clearer idea of what it is like to be a computational physicist and the kind of work they do, and gaining more experience in carrying out my own independent projects in a non-academic setting.

- At MIT I work on a project called BigDish, where we are working to put together a mount for a satellite dish to go on top of the Green building at MIT. My focus was on the concept of operations, which deals with calculating the times the dish would have access to satellites of interest and the application of software in order to communicate with other ground stations and passing satellites.

- After graduation, I plan to get my PhD in Physics or Computer Science and continue to work in fields that use computers to allow modeling of complex systems based on first principle physics calculations.

CNBR
Center for NanoBiotechnology Research
at Alabama State University

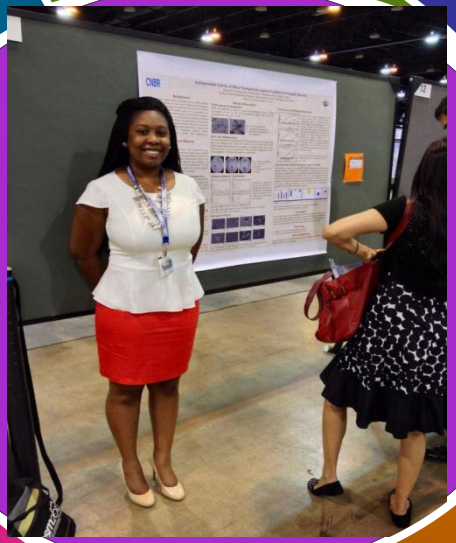
Antimicrobial Activity of p557 Conjugated with Au-Ag Nanoparticles

Bachelor's: Biology
Minor Chemistry

Master's: Biology

PhD: Micro.
1st Year

The failure in life is not reaching for the stars and falling short of your goal; rather it's deciding not to reach at all
-Benjamine Mays



LIBS
- Analytical and Bioanalytical Chem.
- Biophysical Society

Things I Like:
Dance, Piano, Science, Who-Done-It Thrillers

IBS: PG
Does Manipulation of Hydrolase pmp23 Affect Resistance of *S. pneumoniae*

ALABAMA STATE UNIVERSITY 1867

Nicolas JEAN

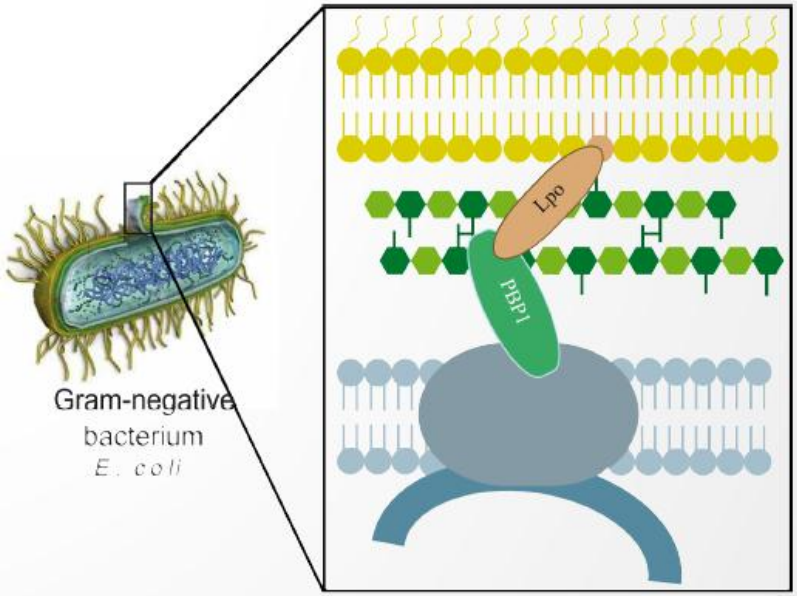
- Bachelor of Science, major in Biology (2010), Joseph Fourier University
- Master in Biochemistry and Structural Biology (2012), Joseph Fourier University
- PhD Thesis at the *Institute of Structural Biology*,
  Biomolecular NMR spectroscopy group (Oct. 2012 – Sept. 2015)

Credit photo : CEA/ D.Morel

Thesis topic :
Lpos, key proteins in peptidoglycan synthesis and potential antibiotic targets

Determination of high-resolution structures

Interaction studies with interaction partners



Catherine Bougault, PhD

Associate professor
since 1995

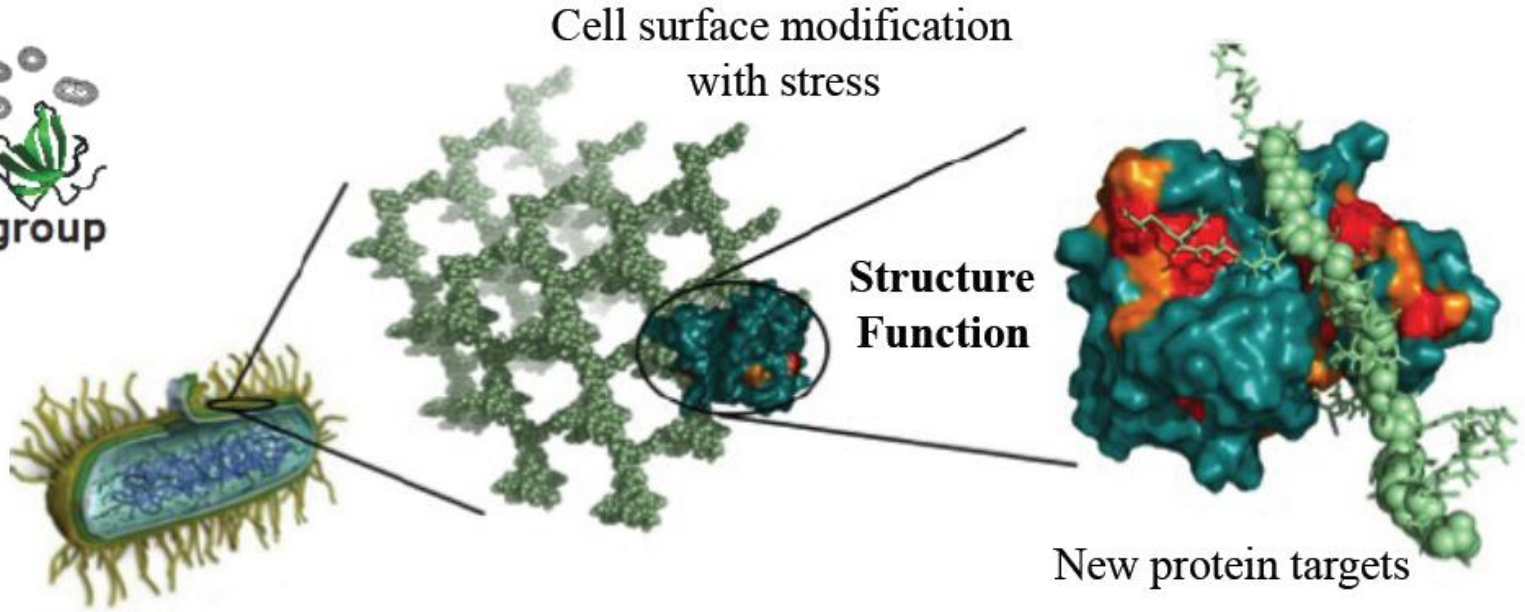
Chemistry Department
International Affairs

Researcher in Biomolecular NMR

Université Joseph Fourier GRENOBLE

ibs

NMR group

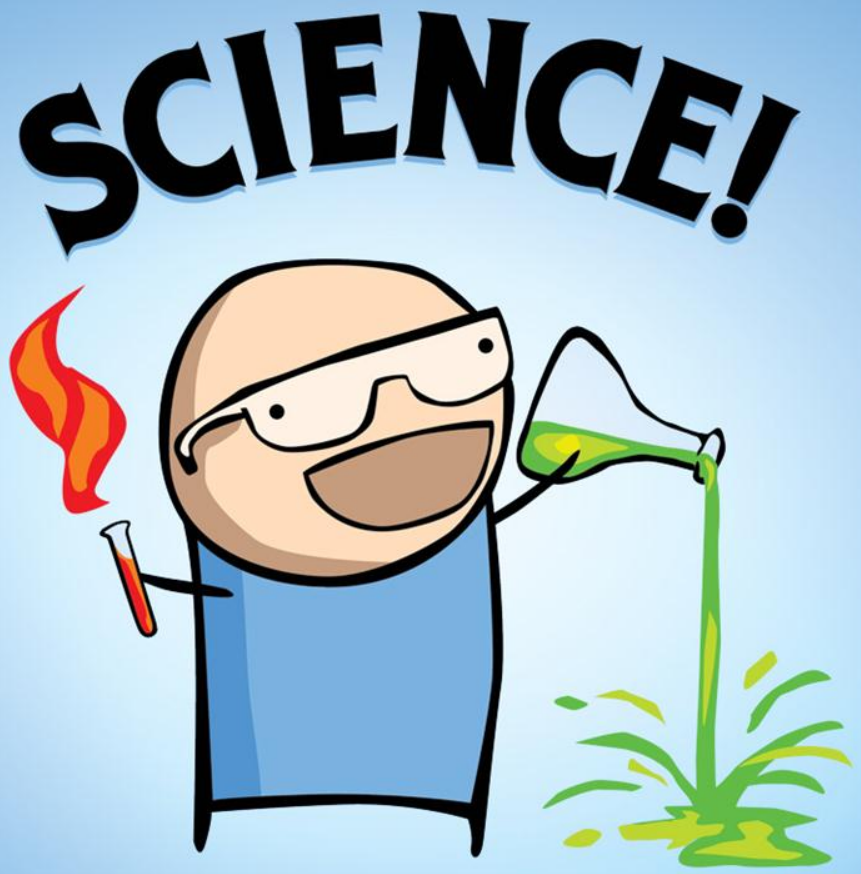


Fighting bacterial antibiotic resistance

ASHLIE WALKER

ORGANIZATIONS:

- Oklahoma Louis Stokes Alliance for Minority Participation (OK-LSAMP) Scholar
- American Chemical Society Member
- SWOSU's Chemistry Club



PUBLICATIONS:

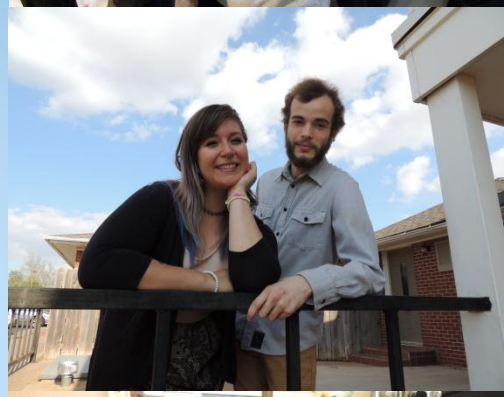
"Dichloropyridine pendant-armed tetraazamacrocycle complexes of first-row transition metals as dual CXCR4/CCR5 chemokine receptor antagonists" Birdsong, O. C.; Walker, A. N.; Davilla, D. J.; Coats, K. L.; Won, D.; Archibald, S. J.; Schols, D.; Hubin, T. J. *in preparation*, **2014**.

"Propyl cross-bridged cyclen ligands and their transition metal complexes as CXCR4 antagonists" Walker, A. N.; Ayala, M. A.; Archibald, S. J.; Schols, D.; Hubin, T. J. *in preparation*, **2014**.

"Unsymmetric bis-tetraazamacrocycles and their transition metal complexes as CXCR4 antagonists" Baker, C. M.; Garcia, C. D.; Jones, D. G.; Shircliff, A. D.; Archibald, S. J.; Hubin, T. J. *in preparation*, **2014**.

EDUCATION:

Southwestern Oklahoma State University
Anticipated Graduation Date May 2015
Bachelor of Science Professional
Weatherford, Oklahoma
Major: **Chemistry**
Minor: **Mathematics**



French American Workshop 2014
Matthew L. Reback

Current Research

- Post-Doctoral Researcher at UJF/CEABS
  - Electrochemical Confocal Raman spectroscopy of H_2 oxidation catalysts on SWCNTs.

Past Research

- BS in Chemistry from University of Wyoming
- PhD in Chemistry from University of Idaho
- Post-Doctoral Researcher at Pacific Northwest National Lab (Washington State)
  - Biomimetic electrochemical H_2 production catalysts

DE LA RECHERCHE À L'INDUSTRIE
cea

UNIVERSITE JOSEPH FOURIER
SCIENCES. TECHNOLOGIE. SANTÉ

Pacific Northwest
NATIONAL LABORATORY

Proudly Operated by Battelle *Since 1965*

Emmanuelle PAULIAC-VAUJOUR

« Nano-integration » @ CEA-Leti – since 2012

Tools and methods to implement nanotechnologies in fully-integrated systems

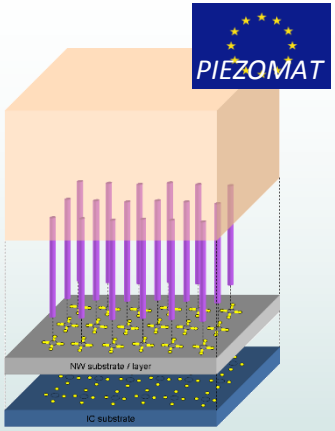
Looking for:

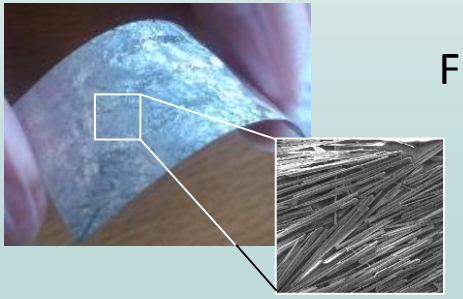
- ⇨ **Internship, PhD, post-doc candidates**
- ⇨ **International collaborations (academia / industry)**

2 approaches

Heterogeneous nano-integration

Compatible with wafer-scale microelectronics

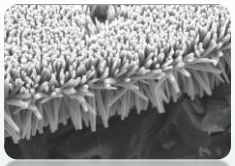




Flexible nano-systems

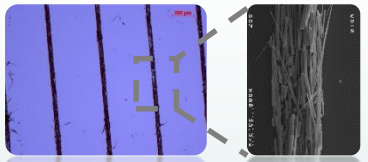
Low-cost, large-area integration of new functionalities

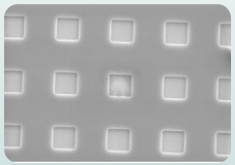
Multi-disciplinary group



Synthesis

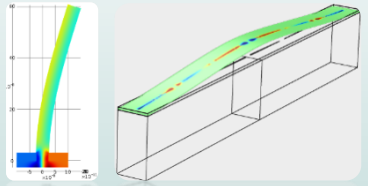
Self-organisation

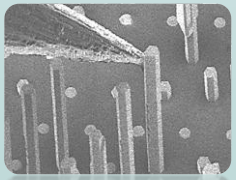




Clean-room processing

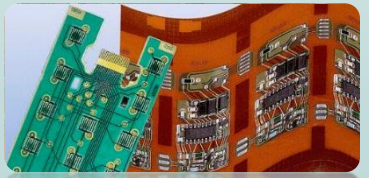
Device design





Characterisation

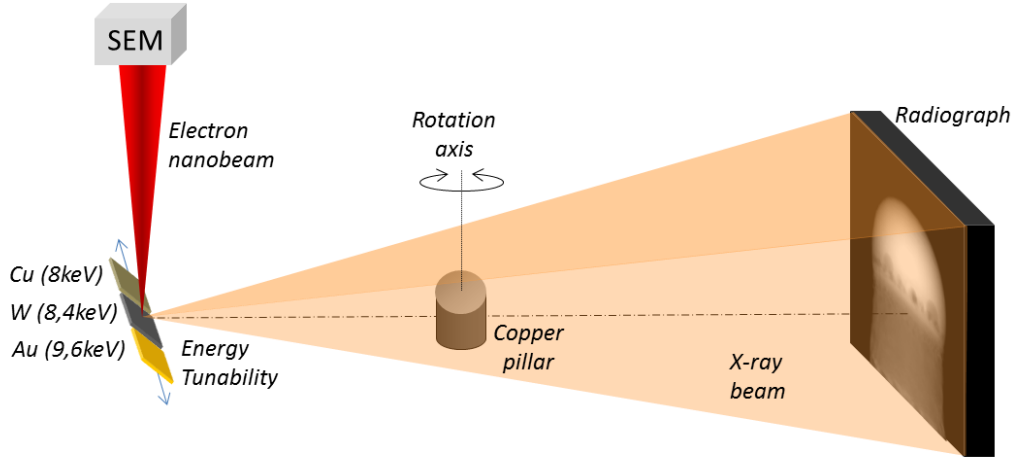
(Flexible) Electronics

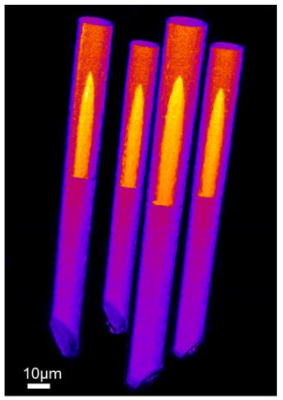


Correlative X-ray and ToF-SIMS nanotomography

- 2 post-doc positions available
- Contact Jean-Paul.Barnes@cea.fr

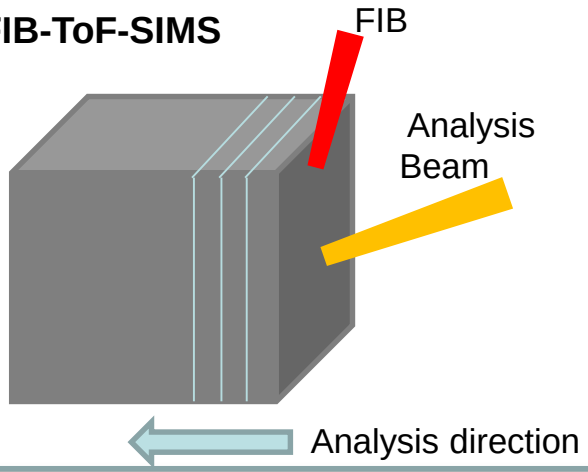
Tomo –X
XuM

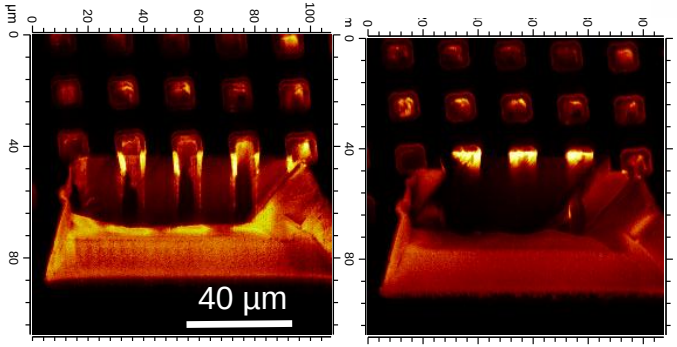




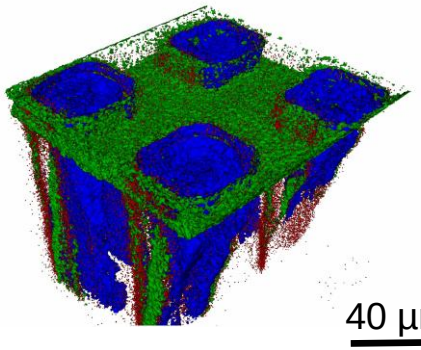
X-rayTomo

FIB-ToF-SIMS





FIB-TOF-SIMS slices



3-D reconstruction