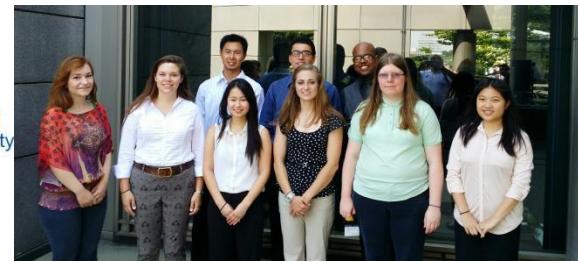
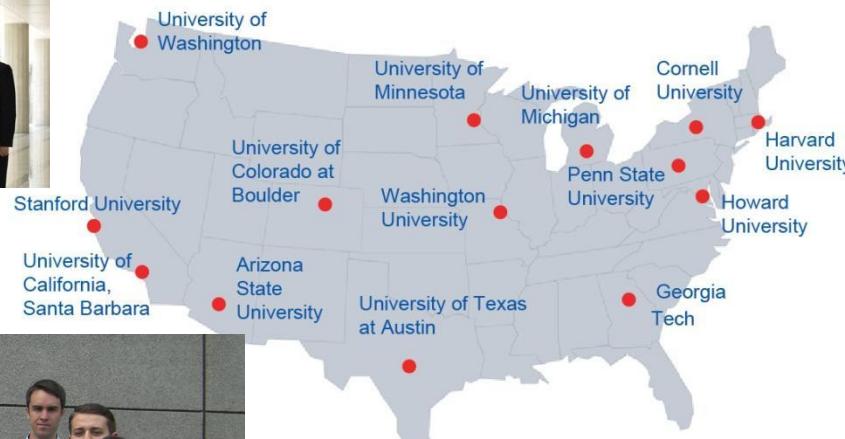


# Seven Years of NNIN iREU at NIMS





A partnership bringing the best US undergraduates interested in Nanotechnology to NIMS/Japan for an advanced research experience to build both advanced technical skills and to increase ability to operate within Global Research Culture

# NNIN iREU 2008—Year 1



5 Students

2 NSF Graduate Fellowships + 1 Honorable Mention

# NNIN iREU 2008

Prof. Sakaki and Dr. Takeshi Noda



**Brian Lambson**

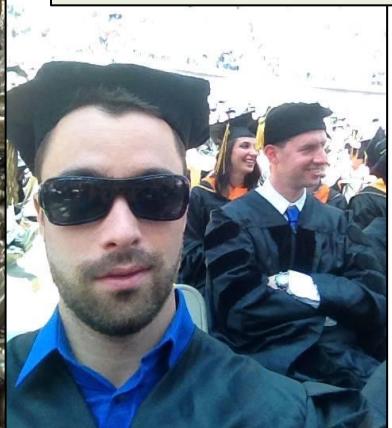
Graduated from Columbia in 2008

Completed Ph.D. in EE U.C Berkeley 2013

Registered Patent Agent at HaynesBoone



Dr. Daisuke Fujita



**NSF Graduate  
Fellowship**

**Alex Luce**

B.S. from U. Arizona

Graduated from UC Berkeley with Ph.D.

Worked at ARPA-E last summer

Works at a Silicon Valley Venture Capital Firm  
(energy investments)

# NNIN iREU 2008

Dr. Masayuki Takeuchi



Prof. Sakaki and Dr. Takeshi Noda



**Ryan Harrison**

Graduated from Johns Hopkins in 2009

In 2014 was **finishing DPhil** in Computational Biophysics at U.Oxford. Looking for non-academic position  
Grew most of his own food last year

**Brian McSkimming**

Graduated from U. Buffalo in 2009

5<sup>h</sup> year graduate student at UCSB; **graduating by end of Summer 2015**

*Plasma Assisted Gas MBE of GaN  
Getting married soon*

# NNIN iREU 2008



**Dr. Naoki Ohashi**

## **Courtney Bergstein Durante**

Terminal B.S. from Carlow College 2009

MBA

Business Analyst at Alcoa; Evaluates R&D opportunities for Alcoa

Married, and Mom(x2)

# NNIN iREU 2009—Year 2



6 Students 2 NSF Graduate Fellowships

# NNIN iREU 2009

**Dr. Naoki Ohashi**

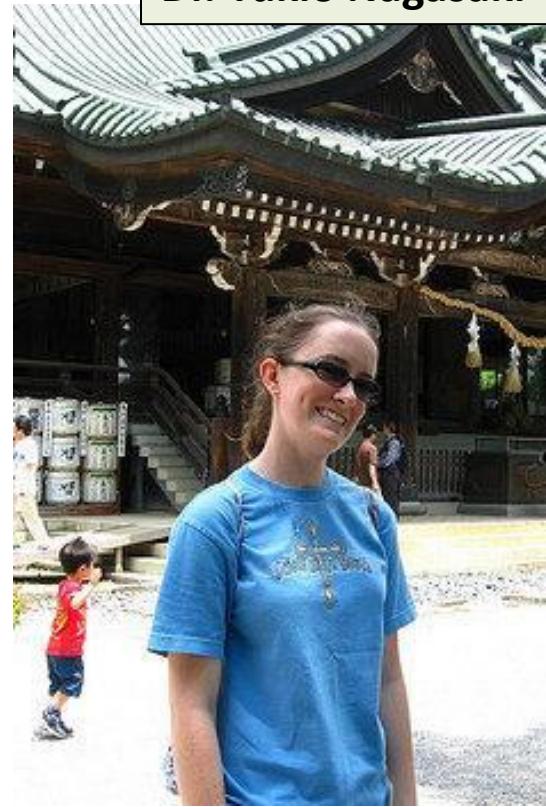


**Arun Swain**

B.S. in ECE from Cornell 2011  
Patent Agent in Washington, DC  
(IP Law Firm)  
Attending Fordham Law School Aug. 2015

*"My NIMS experience has been quite useful as I currently have several Japanese clients (Japanese universities and corporations) for whom I procure patents. Working in a Japanese laboratory at NIMS has provided me with an insight into the Japanese scientific industry that I still draw upon for my daily patent related work. I will be starting law school in August 2015 at Fordham Law School in New York City."*

**Dr. Yukio Nagasaki**



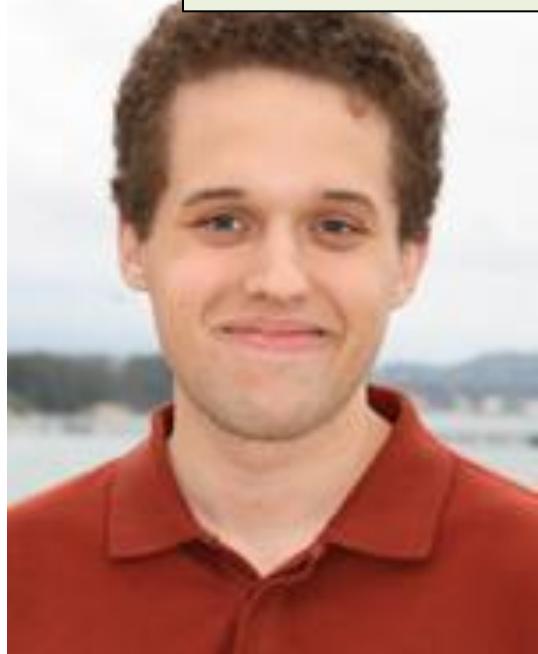
**Jilian Kiser**

Terminal B.S. in Engineering from Olin College  
Civilian Scientist at Naval Undersea Warfare Center

Part time Masters Student at Brown University

# NNIN iREU 2009

**Prof. Sakaki and Dr. Takeshi Noda**

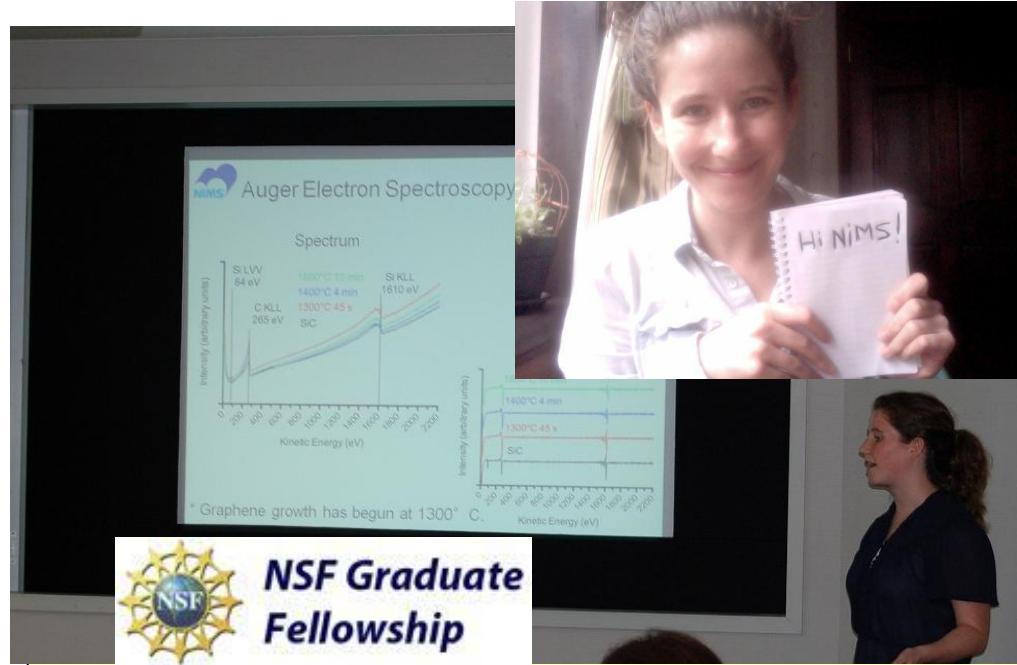


**David Christle**  
B.S. U. Minnesota

Graduate Student at U. Chicago with  
Prof. David Awschalom

*Exploring the physical properties of  
nanoparticles in optical suspension*

**Dr. Daisuke Fujita**



**Julie Stiver**  
B.S. U. Mass Amherst

Completed terminal Masters in Chemical Engineering  
at U. Colorado May 2013

Engineer at Advance Concepts Engineering in Baltimore

# NNIN iREU 2009

**Dr. Yuji Miyahara**



**Dr. Guoping Chen**



**NSF Graduate  
Fellowship**

**Justine Yoon**

B.S. RPI

National Institute for Biomedical Imaging and  
Bioengineering (NIBB, part of NIH)

Develops microfluidic devices for NIH collaborators

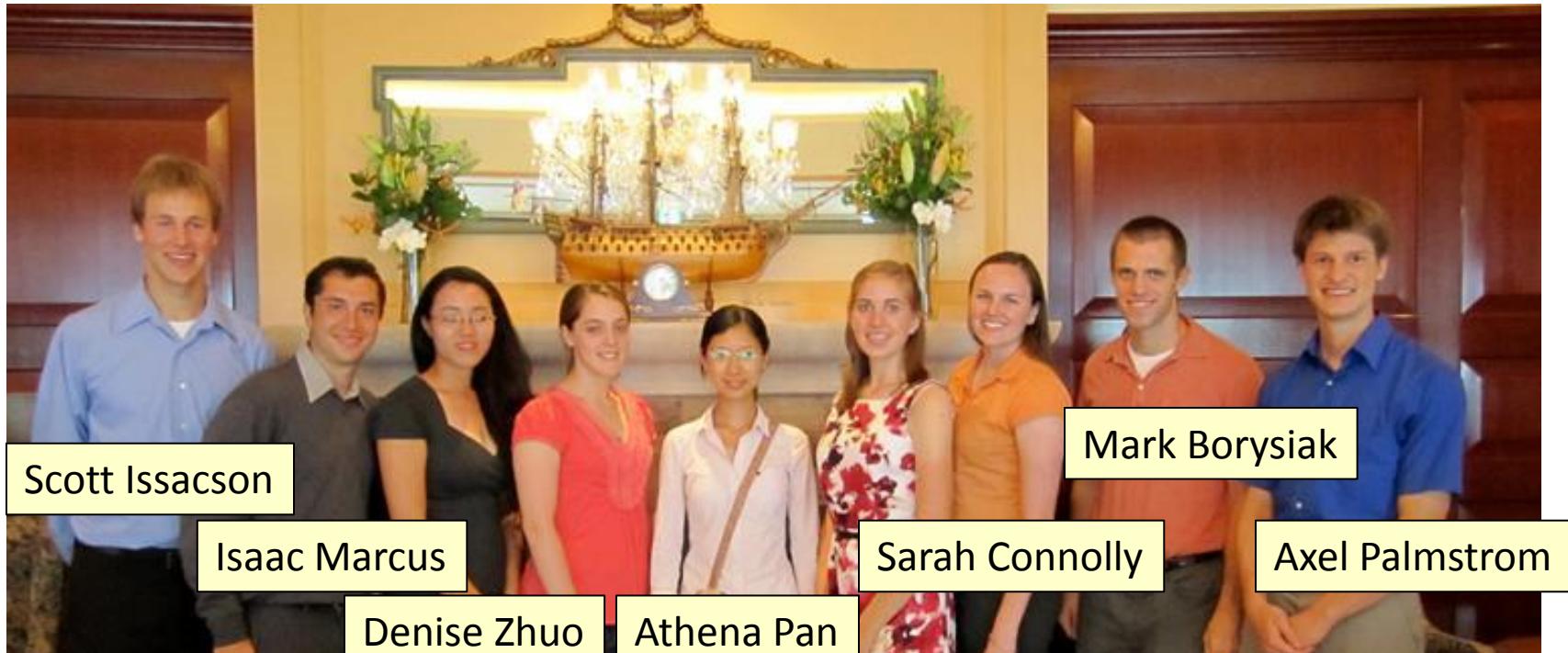
**Sarah Grice**

B.S. U. Maryland

Briefly attended Graduate School at Cornell

No longer in Science

# NNIN iREU 2010 –Year 3



9 interns

4 NSF Graduate Fellows + 4 NSFGFP Honorable Mention

# NNIN iREU 2010

**Dr. Enrico Traversa**



**Isaac Markus**

B.S. Cooper Union

4<sup>th</sup> year graduate student at UC Berkeley  
Currently internship at IBM Almaden; and Fall  
internship in Europe

Recently Married

Recently saw Dr. Traversa at a conference in  
Europe !

*“Japan continue to be one of my most  
memorable experiences both  
academically and personally, and have  
so many fond memories”*

# NNIN iREU 2010

**Dr. Nobutaka Hanagata**



*“It's hard to believe that this time 5 years ago I was getting ready to head to Japan, I still think very fondly of my summer there and how my experience with NNIN, my cohort, and Dr. Hanagata-san's lab group have positively shaped my future as a scientist and broadened my global perspective on life.”*

**Sarah Connolly**

B.S. U. Florida

Worked as Public Health Associate for Center for Disease Control (US Gov)

Currently in a Ph.D./MPH dual degree program in Immunology at Emory University in Atlanta

# NNIN iREU 2010

**Dr. Daisuke Fujita**



*"I remain very grateful for my NNIN REU and iREU experiences and still consider them to be some of the most influential times of my career thus far.*

*I'm currently a third-year Ph.D. student at Stanford University working in Prof. Reinhold Dauskardt's group in the Materials Science and Engineering department. I study the mechanical and fracture properties of polymers in confinement (that is, how large polymer chains behave when they're put into very small spaces)."*

## **Scott Isaacson**

B.S. U. Minnesota

Graduate Student in Materials Science at Stanford

3 year Kodak Fellowship

# NNIN iREU 2010

**Dr. Toyohiro Chikyow**

## **Axel Palmstrom**

I am a third year PhD candidate at Stanford University with Stacey Bent's group in the Department of Chemical Engineering. My research activities are focused on inorganic functionalization of colloidal quantum dot solar cells with atomic layer deposition. I have one recent publication titled "Improving Performance in Colloidal Quantum Dot Solar Cells by Tuning Band Alignment through Surface Dipole Moments in JPCC and I have a review paper that is about to be published in Nanoscale titled "Atomic Layer Deposition in Nanostructured Photovoltaics: Tuning Optical, Electronic and Surface Properties.



**Honorable  
Mention**

# NNIN iREU 2010



**Dr. Kazutaka Mitsuishi**



**BARRY M. GOLDWATER SCHOLARSHIP  
AND EXCELLENCE IN EDUCATION PROGRAM**

**Claire McLellan**

B.S. Wake Forest

3d year Graduate Student at UCSB

*Studies Nitrogen-vacancy defects in Diamond*

# NNIN iREU 2010

**Mark Borysiak**

B.S. Ohio State

Ph.D. Student at U.Washington



*I'm currently living in Seattle, WA with my fiancée Kathy and dog Cody. I've been pursuing my PhD in Chemical Engineering at the University of Washington over the past ~4 years in Jonathan Posner's microfluidic lab. My research has focused on creating point-of-care nucleic acid diagnostics for infectious disease diagnosis in low-income settings and we are currently spinning out a start-up based on the technology (we recently won a \$25,000 grand prize at UW business plan competition.)*

*I wouldn't be where I am at today without my REU experience in Japan. The work of NNIN REU and Japan mentors is tremendous for career building and much appreciated!*

**Dr. Masayuki Takeuchi**

# NNIN iREU 2010

Dr. Yasuo Koide



Dr. Naoki Ohashi



**Honorable  
Mention**

## Arolyn Conwill

B.S. Pomona College

4<sup>th</sup> year Graduate Student in Physics  
at MIT (biophysics)

## Denys Zhuo

B.S. MIT

Graduate Student in Materials Science at  
Stanford

*High performance, thermo-mechanically  
robust separators for Li-ion batteries*

# NNIN iREU 2010



**Athena Pan**  
B.S. Brandeis  
3d year Graduate Student at UC San Diego  
Ultrafast and Nanoscale Optics

# NNIN iREU 2012



8 interns

4 NSF Graduate Fellowships + 1 Honorable Mention

# NNIN iREU 2012

Dr. Naoki Ohashi



NSF Graduate Fellowship



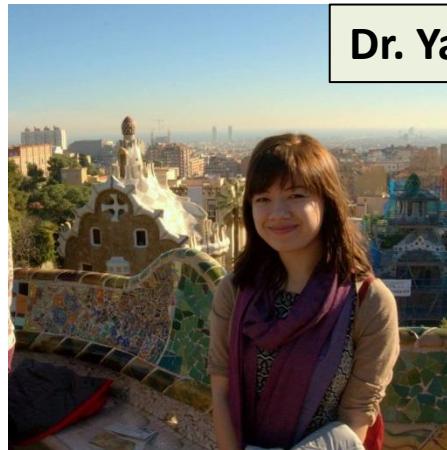
Alex Bryant

4<sup>th</sup> year graduate School in  
Materials Science at Georgia Tech

*phase transitions in a metallic glass of Ce-Al*



Dr. Yasuo Koide



NSF Graduate Fellowship

Also NDSEG Fellow

Daryl Vulis

B.S. SUNY Stony Brook  
Graduate Student at Harvard

*Integrated zero-index metamaterials*

*Much of my focus has been on the fabrication of these metamaterials in Harvard's CNS facilities - my internship as part of the Japan iREU in 2012 with Dr. Koide and Dr. Watanabe was a huge help in finding that direction!*

# NNIN iREU 2012

Dr. Kentaro Tashiro



**Kelly Suralik**

Graduated May 2013 Middlebury College  
Entered Materials Chemistry Ph.D Program  
at University of Wisconsin Fall 2014  
*“we investigate the segmental mobility of  
polymer glasses during deformation”*

Middlebury College #1

Prof. Sakaki and Dr. Takeshi Noda



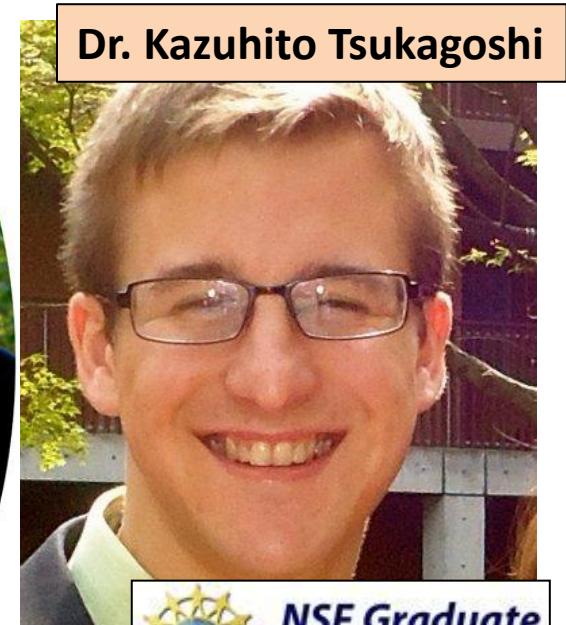
**Lauren Otto**

B.S. Bethel University  
3d year Graduate Student in Electrical  
Engineering at University of Minnesota  
Did internship at HGST and now will be doing  
thesis research at Lawrence Berkeley



**NSF Graduate  
Fellowship**

# NNIN iREU 2012



## **Olivia Lambdin**

Graduated from U. Nebraska May 2013  
Joint Bioengineering Ph.D. program at UC  
Berkeley-UCSF

## **Olivia Scheideler**

## **Will Scheideler**

Graduated from Duke May 2013  
Graduate School at UC Berkeley

# NNIN iREU 2012

**Dr. Toyohiro Chikyo**



**Boo Schliep**

3d year in Materials Science  
Ph.D. program at University of  
Minnesota

*complex magnetic materials and  
ultrafast electron microscopy.*



**Kendall Pletcher**

B.S. Engineering May 2013  
Olin College

Worked at Boston General Hospital on  
BioMEMS devices  
Currently Product Innovation Specialist  
at Athena Health

# NNIN iREU 2013



Geofry Vrla

Steve Olson

Colin Burns-Heffner

Jacob Rothenberg

Radu Reit

Andrew Tam

Clay Long

Emily Ross

Melinda Jue

# NNIN iREU 2013

**Prof. Sakaki and Dr. Takeshi Noda**



**Adam Overvig**

Graduate Student at Columbia University,  
studying Applied Physics.

In Professor Nanfang Yu's group working on  
Nanophotonics (current project is a graphene  
reflector modulator for mid IR light).

# NNIN iREU 2013

**Dr. Kentaro Toshiro**



**Geoffrey Vrla**

Graduated with degree in Chemistry from Middlebury College.

Graduate student at Princeton in the Molecular Biology PhD program.



**Middlebury College #2**

# NNIN iREU 2013

**Dr. Toyohiro Chikyow**



**NSF Graduate  
Fellowship**

**Jacob Rothenberg**

B.S. from University of Rochester

PhD student in EE at Columbia  
Working in Dr. Osgood's Photonic Devices Lab.

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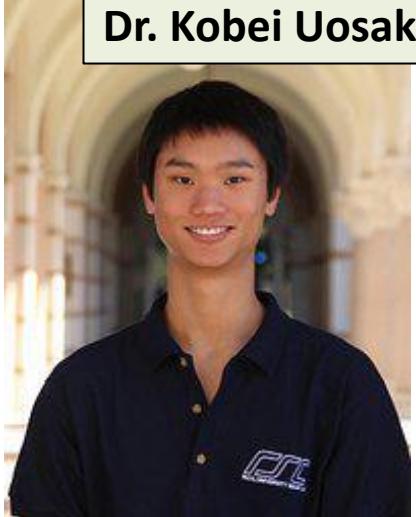
# NNIN iREU 2013

## Dr. Masayuki Takeuchi



**Honorable  
Mention**

## Dr. Kobei Uosaki



### Melinda Jue

B.S. in Chemistry from U.Texas

Ph.D. Student at Georgia Institute of Technology in chemical engineering.

Presidential Fellowship at Georgia Tech

*Hollow fiber membranes for organic separations.*

### Andrew Tam

Bachelor's of Science in Electrical Engineering from Rice (2014)

Inducted into the Theta Rho chapter of the Eta Kappa Nu honors society within IEEE

Ph.D. Graduate Student in Electrical Engineering at Georgia Tech

Awarded the President's Fellowship at GTech

# NNIN iREU 2013

**Dr. Naoki Ohashi**



**Emily Ross**

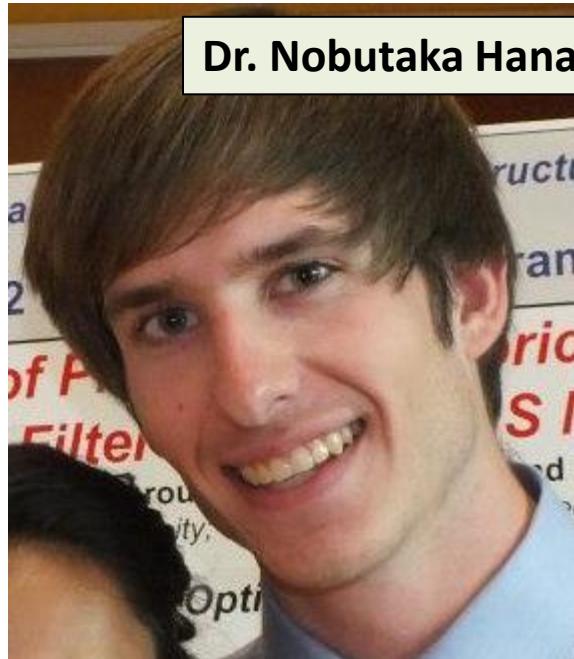
Graduated from Harvey Mudd College with a Bachelor of Science in General Engineering in May 2014.

In July 2014, started working in the patent law group at Fenwick & West LLP, where she prosecutes patents in a variety of fields, including software, hardware, food science, and materials.

Likely continue in patent law and pursue a law degree in a couple of years.

# NNIN iREU 2013

**Dr. Nobutaka Hanagata**



## **Colin Burns-Heffner**

Graduated from Clemson University with a BS and MS degrees in Bioengineering

Currently a Quality Engineer at WL Gore Associates in Flagstaff, AZ

Working in new product development for cardiovascular devices.

# NNIN iREU 2013

**Dr. Yasuo Koide**



**Clay Long**

Electrical and Computer Engineering Graduate Students at Carnegie Mellon University and just finished a Masters Degree on the way to a PhD.

General area of research is in nanofabrication and device physics.

Currently working on a novel BJT like transistor for high frequency analog applications.

# NNIN iREU 2013

**Dr. Daisuke Fujita**



**Steve Olson**

I just finished a Master's of Science in Electrical Engineering from the University of Minnesota. Thesis was titled "Template-stripped plasmonic cup resonators for single-nanohole-based sensing and spectroscopy".

Last summer (2014) I had an internship with 3M Company. **I was given the internship directly because of my experience working with Daisuke Fujita's group at NIMS. The internship turned into a full-time job offer.** After much deliberation, I decided to take the job instead of continuing on for a PhD (for the time being). As such, in June 2015, I will be starting at 3M as an Advanced Process Development Engineer in the Vapor Coating and Surface Modification group which is part of the 3M Corporate Research Process Laboratories in Maplewood, MN.

# NNIN iREU 2013

Dr. Yukio Nagasaki



Radu Reit

- PhD candidate in Bioengineering at the University of Texas at Dallas
- National Science Foundation Graduate Research Fellow
- Jonsson Family Graduate Fellowship in Bioengineering
- Working on shape memory polymer substrates for implantable biomedical devices
- Specializing in biodegradable shape memory polymers and their applications towards neural prosthetics



**NSF Graduate  
Fellowship**

# NNIN iREU 2014



# NNIN iREU 2014

**Dr. Daisuke Fujita**



**Jill Wenderott**

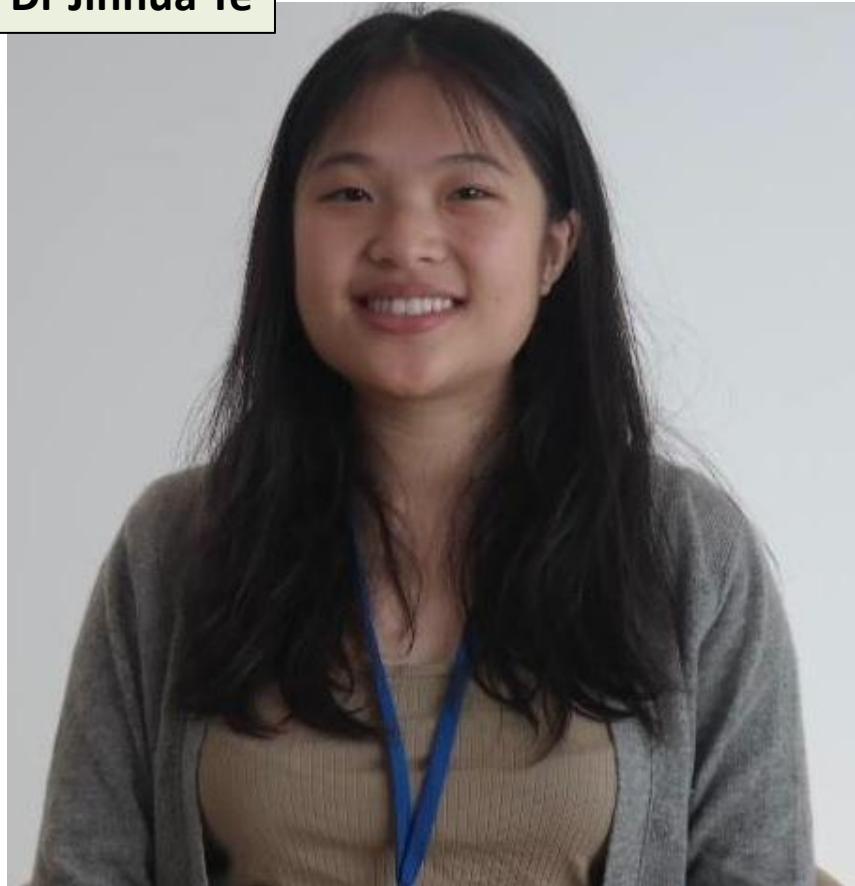
I'm currently up at the University of Michigan pursuing a PhD in Materials Science and Engineering.

My projects involve using AFM-based techniques to characterize polymeric and bio-materials.

I'm greatly enjoying Michigan, though I've yet to find sushi that compares to any I had while in Japan.

# NNIN iREU 2014

Dr Jinhua Ye



**Connie Wu**

B.S. in Engineering AND Economics, U. Penn.

Pursuing a PhD in Electrical Engineering at Stanford University.

Researching haptic applications to virtual reality systems.

Will be interning at Facebook as a Technical Program Manager.

# NNIN iREU 2014



## Allison Wustrow

“Since coming back to America I have begun my graduate degree in chemistry at Northwestern University. Inspired to study solid state chemistry by Mori-san and Maruyama-san, I decided to work for Ken Poeppelmeier on the development of cathodes for multivalent batteries.”

# NNIN iREU 2014

Prof. Sakaki and Dr. Takeshi Noda



Arthur Bowman

B.S. in Physics from Wayne State

Graduate Student in Physics at Wayne State University (Detroit, Michigan).

Engaged to the woman in the picture

*"I am eternally grateful to the NNIN and the wonderful people at NIMS for the introduction to the exciting field of nanoscale science and engineering, in which I plan to write my thesis. There is great work being done in this field, on both sides of the globe."*

# NNIN iREU 2014

***Dr. Takao Aoyagi***



**Gabriel Lopez**

Still an undergraduate at University of  
Puerto Rico

Summer internship 2015 at MIT

# NNIN iREU 2014

**Dr. Yasuo Koide**



**Tiffany Huang**

“I'm a first-year electrical engineering PhD student in the Hesselink Group at Stanford University. I'm working on a project fabricating plasmonic structures to optically transport particles. I miss Japan very much!”

# NNIN iREU 2014

Dr. Jun Nakanishi



**Meghan Kazanski**

BS in MechE from U. Rochester

*"I hope all is well! I'm excited for the next round of students. I loved my experience so much last year, that I am actually spending the **next year completing a rigorous Japanese Language and culture curriculum at my university**. I wrote an essay detailing my experience from last summer to my university. They found my experience compelling and gave me an award **for a tuition-free year of Japanese study to follow the completion of my BME degree**. I'm looking forward to the next year. Who knows, I might be back in Japan doing research soon enough!"*

# NNIN iREU 2014

Dr. Guoping Chen



NSF Graduate  
Fellowship

Peter Su

Whitaker International Fellow in  
Professor Bernd Wollscheid's lab at  
ETH Zürich in Switzerland

Entering PhD in Chemical  
Engineering at Northwestern  
University Fall 2015

*“Working and living abroad for almost a year since I graduated college has easily been the most transformative experience in my life from experiencing new cultures and really seeing how other nations function both in and outside of the laboratory, to really putting my life in perspective outside of the comfort zones I didn’t even realize I had until I left them.”*

# NNIN iREU 2014

**Dr. Nobutaka Hanagata**



Samantha visiting Gabriel in Puerto Rico



**Samantha Corber**

Starting Ph.D in bioengineering at University of California Riverside in July

Will be working with Dr. Bahman Anvari on a nanotechnology project involving genome-depleted Brome Mosaic Virus shells that have been doped with near infrared imaging agents for cancer imaging and treatment.

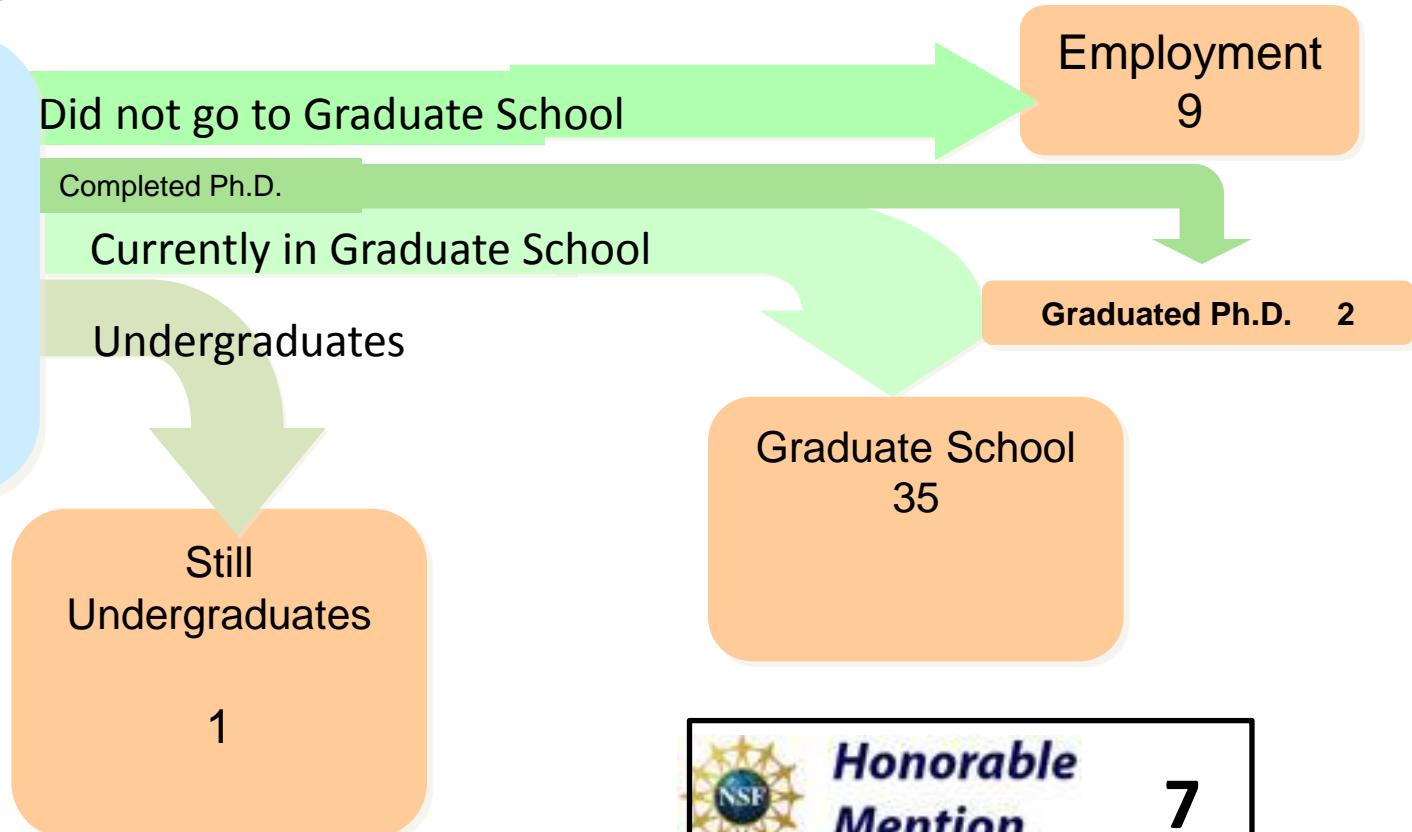
# NNIN iREU Japan

## Participant Outcomes-2008-2014

### NNIN Japan iREU

47 total participants  
2008 - 2014

5 in 2008  
6 in 2009  
9 in 2010  
0 in 2011  
8 in 2012  
10 in 2013  
9 in 2014



# Graduate Schools

- Berkeley (5)
- Stanford (4)
- UCSB (3)
- Minnesota (3)
- Georgia Tech (3)
- Northeastern (2)
- Columbia (2)
- Oxford
- MIT
- Princeton
- Harvard
- U. Chicago
- Carnegie Mellon
- U. Michigan
- U. Washington
- Wayne State University
- Emory U
- U.C. Riverside
- U.C. San Diego
- U. Wisconsin
- U. Texas Dallas

# NNIN iREU 2015 !



# Special Thanks to All the Project Leaders

• Prof. Sakaki and Dr. Takeshi Noda	7
• Dr. Daisuke Fujita	6
• Dr Nobutaka Hanagata	5
• Dr. Naoki Ohashi	5
• Dr. Yasuo Koide	5
• Dr. Masayuki Takeuchi	4
• Dr. Guoping Chen	3
• Dr. Jun Nakanishi	4
• Dr. Toyohiro Chikyow	3
• Dr. Yukio Nagasaki	3

• Dr Jinhua Ye	2
• Dr. Kentaro Tashiro	2
• Dr. Kobei Uosaki	2
• Dr. Takao Mori	2
• Dr. Enrico Traversa	1
• Dr. Kazuhito Tsukagoshi	1
• Dr. Kazutaka Mitsuishi	1
• Dr. Takao Aoyagi	1
• Dr. Yuji Miyahara	1

**Special Thanks to Prof. Sakaki for his  
wonderful study trips to Nagoya**



# And More Special Thanks

- President Kishi and President Ushioda
- Tetsuji Noda
- Nanotechnology Platform Office
- Graduate Research Office

Program Supported by the  
**National Science Foundation** via



- **NNIN Cooperative Agreement** as part of the NNIN Education Program
- **International Research Experience for Scientists Program** from NSF International Office (partial for 6 years)
- And thanks to the NSF Tokyo Office for their support

Thank You for Your Support