



SEARCH



RESEARCH AREAS

FUNDING

AWARDS

DOCUMENT LIBRARY

NEWS

ABOUT NSF

Awards


[Search Awards](#)
[Recent Awards](#)
[Presidential and Honorary Awards](#)
[About Awards](#)

How to Manage Your Award

[Grant Policy Manual](#)
[Grant General Conditions](#)
[Cooperative Agreement Conditions](#)
[Special Conditions](#)
[Federal Demonstration Partnership](#)
[Policy Office Website](#)


Award Abstract #0946435

MIRTHE Post-Doctoral Fellowship in Industry

NSF Org: [EEC](#)
[Div Of Engineering Education and Centers](#)

Initial Amendment Date: August 27, 2009

Latest Amendment Date: August 27, 2009

Award Number: 0946435

Award Instrument: Standard Grant

Program Manager: Deborah Jackson
EEC Div Of Engineering Education and Centers
ENG Directorate For Engineering

Start Date: September 1, 2009

End Date: August 31, 2012 (Estimated)

Awarded Amount to Date: \$472,165.00

Investigator(s): Claire Gmachl cgmachl@princeton.edu (Principal Investigator)

Sponsor: Princeton University
Off. of Research & Proj. Admin.
Princeton, NJ 08544-2020 (609)258-3090

NSF Program(s): SPECIAL STUDIES AND ANALYSES

Program Reference Code(s): 0000, 128E, 130E, 1480, OTHR

Program Element Code(s): 1385

ABSTRACT

MIRTHE Post-Doctoral Fellowship in Industry

MIRTHE, the NSF-sponsored Engineering Research Center for Mid-InfraRed Technologies for Health and

the Environment, conducts a vibrant education and outreach program that starts at K-12 and culminates

at the post-doctoral level. Here, we propose a new addition to MIRTHE's post-doctoral research and

training program, i.e. the MIRTHE Post-doctoral Fellowship in Industry program.

A small group of recent MIRTHE graduates will be competitively selected to conduct year-long, postdoctoral

research on-site with MIRTHE industry member companies. The research projects are closely

linked to the fellows, former MIRTHE research and strengthen the university industry partnerships arising

from the joint work and the group of academic and industrial mentors tied together by the post-doc

fellows. In addition to full time work in industry, the post-doctoral fellows will be assigned mentors at

Princeton University; they will report twice yearly on their research to the entire MIRTHE community. The

fellowships are competitive, with a strict selection process, and are tightly woven into MIRTHE's overall

formal post-doctoral mentoring program.

The post-doctoral fellows are appointed through Princeton University at the base salary rate; the hosting

companies will raise the fellows, salary to the companies' rate and will fund the fellows research

expenses; we estimate this to amount to at least 25% cost-sharing by industry.

Intellectual merit

MIRTHE is leading the development of an entirely new platform of trace gas sensor systems that provide

high-performance, cost-effective, and networked sensing capabilities. These sensor systems are based

on mid-infrared Quantum Cascade laser spectroscopy and excel through their compactness, autonomy,

networking capability, and fast time response. They fulfill the application requirements of trace chemical

sensing on the individual point sensor, urban sensor network, remote sensor, and regional scale. In doing

so, MIRTHE addresses the important societal challenges of securing a clean, safe, sustainable, and

healthy environment, clean air to breathe and accessible healthcare on the national and global scale.

The here proposed MIRTHE Post-doctoral Fellowship in Industry program sends five or more highly

qualified, competitively selected post-doctoral fellows to work on-site with MIRTHE industry members on

MIRTHE-related research projects. Their high degree of engineering excellence will strengthen

university, industry collaborations and will advance MIRTHE's mission and bold vision stated above.

Broader impacts

MIRTHE successfully trains and graduates a diverse and globally competitive U.S. workforce ready to

assume engineering leadership for the 21st century. Since 2006, MIRTHE's post-doctoral training program

has grown to encompass 9 current post-doctoral fellows with career aspirations in academia,

government, and industry. Three fellows have already ?graduated? to long-term employment in

academia. MIRTHE has a proven track record to reach out to groups historically underrepresented in

science and engineering, and its researcher and student diversity consistently exceeds comparable

national averages. The here proposed MIRTHE Post-doctoral Fellows in Industry program provides an

outstanding opportunity to increase the size and improve the diversity of MIRTHE's post-doctoral

researcher pool.

The program will provide MIRTHE's graduates with additional training, skills, knowledge, and insights,

and will make them more competitive in the job-market, hence allaying the gravest of our post-doctoral

researchers, concerns about their career opportunities in the current weak economy.

The program will attract specifically post-doctoral researchers interested in a career in industry and in

starting up their own company. The post-doctoral fellows will also form key connections between

academia and industry in MIRTHE's industrial/practitioner collaboration program, which develops

prototypes of cost-effective, market-ready, mid-infrared sensing technologies; these technologies result in

new profitable product lines and new revenue streams for important industry sectors.

Please report errors in award information by writing to: awardsearch@nsf.gov.



[RESEARCH AREAS](#)

[FUNDING](#)

[AWARDS](#)

[DOCUMENT LIBRARY](#)

[NEWS](#)

[ABOUT NSF](#)

[Website Policies](#) | [Budget and Performance](#) | [Inspector General](#) | [Privacy](#) | [FOIA](#) | [No FEAR Act](#) | [USA.gov](#)
[Accessibility](#) | [Plain Language](#) | [Contact](#)



National Science Foundation, 2415 Eisenhower Avenue, Alexandria, Virginia 22314, USA
Tel: (703) 292-5111, FIRS: (800) 877-8339 | TDD: (800) 281-8749

 [Text Only Version](#)