Former Fellow Follow-Up: Dr. Jason Riley, Chief Technology Officer

Jason Riley, PhD, is a chief technical officer (CTO) at Archeoptix Biomedical, a start-up company out of Kingston, Ontario, Canada. Jason founded Archeoptix Biomedical to commercialize and employ his patented technology—a near infrared (NIR) device that detects bleeding in the brain.

Jason began the research and patent process for this technology during his postdoctoral fellowship in the NICHD laboratory of Dr. Amir Gandjbakhche, where he studied bio-photonics for seven years. Like many scientific careers, Jason's path to CTO of a start-up was not straight forward or easy. Read the Q&A session below to learn about challenges that Jason faced over the years, and the well-earned resiliency that followed.

In the spirit of our resiliency theme, can you describe your path from your first interest in science to where you are now, and any failures or obstacles you encountered along the way?

So, did I fail? Yes, a lot.

For my first degree, I completed a little over a year of biochemistry and genetics. Due to personal events, including a death in the family, being in a car wreck, and, well, being a student, I didn't do so well. I quit for the first time. The next year I restarted with an interest in computers. My advisors thought I wouldn't be good at computer science, so I chose electronic and electrical engineering. However, I also completed an elective in artificial intelligence, which was instructed by the guy who said I couldn't do computers. I was top of the class...

LESSON: Don't let anyone ever tell you that you can't do it. (continued on page 3)
Letter from the Editor

“You are more resilient than you think you are,” someone told me recently. I was feeling overwhelmed and defeated. Like many of you, the experiences of the pandemic exposed me to exhaustion and burnout—not just for me, but for my entire family.

I’ve encountered a need for resiliency a few times during my life. The most prominent experience was during my recovery from lymphoma, which required aggressive chemotherapy. I learned to create and embrace a support network of friends and family to make it through. Now, I need to bounce back again from the stressors of the past year. Resilience is a hard-earned trait. But once mastered, you might find yourself stronger than you were before.

This issue of the newsletter is dedicated to stories of resiliency. In our Former Fellow Follow-Up column, Dr. Jason Riley describes the many obstacles and failures he worked through to bring his patented technology to market. From each failure, he learned his strengths and moved forward toward his goal.

We also received several stories of resiliency from current fellows and investigators. I encourage you to check out their experiences on page 6. We are not alone in our hardships, and yes, there is a light at the end of the tunnel. There are many sources of support as we continue to build resilience. You’ll find several in this month’s Clinical Corner column, the Rep Report, and April’s announcements and events.

Vaccines are on the way. Schools are reopening. Some restrictions are lifting. There is hope that life will soon be bustling again.

Your Editor in Chief,
Shana R. Spindler, PhD

Please send questions or comments to our editor at shana.spindler@nih.gov.
Three years later, I had earned a 1st class honors with a prize in instrumentation and control engineering.

I moved into programming for financial databases. I turned down IBM—even after they increased their offer—over a girl (actually, a good decision for reasons to do with their HR policies at the time). Turning down IBM was NOT A FAIL—although some said it was.

After that, I completed a master’s at University College London in computer vision, image processing, and simulation. I got a kick in the teeth at the end: I didn’t receive a distinction, as my own advisor downgraded my project (I’m not supposed to know that). I ended up receiving an award for it, though, which funded my PhD work. I went on to complete my PhD training with that advisor for five years. It should have been three years. I nearly quit a bunch. But, I earned the PhD and moved across the Atlantic to the NIH.

After a seven-year postdoc at NIH, I moved on (a dark few months followed). Let’s be honest, there wasn’t the money to keep me in the lab, even though I was wanted. I moved to Canada. By now I am married with three kids.

I met a guy to talk about making the device that I invented at NIH. Well, he was like the third or fourth guy—we hit it off.

The rest is “history.” I’ve nearly quit several times. Start-ups require being prepared for horrible uncertainty, but my four kids are relatively happy and well-adjusted despite all that. Did I fail over the years? Yep—but without the failures, I wouldn’t be near delivering an exciting new technology to market.

**During your career journey, what was your biggest obstacle, and how did you get through it?**

Biggest obstacle? Myself. I am my own worst enemy: self-doubt, overconfidence (yes, I have both), and just wanting to please everyone all the time. Sometimes you can’t…and you have to know when that is okay.

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Did you ever feel like quitting something?
Yes, so I mentioned before that I did quit one degree. Since then, I've quit a career in finance, because I wanted something more related to research. Now I'm back in industry, because, well it's a good fit.

In all these times, I've been called a failure more than once. Have I failed? Oh yes, I have. But the truth is that you must get back up. You must focus on what motivates you.

An example is that I quit smoking when I started dating my wife. I was a 20-plus-a-day man for over a decade, and I quit literally overnight. Why? Because her mother died from lung cancer when she was 12. I found a reason, THE reason. Having one real reason to get back up is what it takes. Now it's my boys' future. I will always get back up. Does it sound trite, yes, but it's true. I'd quit smoking before with many “good“ reasons, but always started again, after weeks, months, and once after two years. This time I’ve been without smokes for 12 to 13 years.

What was applying for a patent like? Did you experience any failures while getting your patent granted? If so, what happened and how did it resolve?
Applying for patents is grueling. The one I worked on while at NIH has just been granted after many years. I have a few others now, and they’re also nearly complete. But the truth is, you will be asked to prove stuff that makes no sense. I once had to explain that they were literally asking me to patent a computer mouse as part of my patent. I was like, “Sure, and do I get royalties from every mouse sold after I do that? Because—SWEET!”

There will be conversations with the United States Patent and Trademark Office where you receive vaguely related research articles, or patents that are only remotely related to yours, and you’ll have to justify why your work is unique.

What has been your most important life lesson?
Hmm...probably see the smoking story above: Have one reason, the right reason to do something, and you will succeed.

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If you could talk to your past self, what point in time would you pick, and what would you say?
Hey 12-year-old me! Don’t drink and do drugs. Honestly, I can think of a lot of things to say to myself at various times in my life, but that is first, closely followed by talking to me at the early days of my start-up company. “Don’t overpromise, and don’t compromise for a result to try to make the investors happy. Pick the right partners, pick the right investors, and you won’t need to.”

What are your personal dreams/goals for your future?
Finish the device, save one life, and provide for my boys. I mean, if the device saves more than one person, great! But it only needs to save one life to make the journey worth it.

For fellows who are going through hardship or perceived failure right now, what would you say to them over a cup of coffee?
In all honesty, I’d say to follow your dreams, because people will tell you they aren’t real.

The reality is that we will get knocked down in life and must stand back up again. It is 100% OK to fail. My darkest secret? I have been unemployed; I have been a painter/decorator; I have been an administrative assistant; I have been a laborer. I do have three degrees, and I’m still standing because I don’t look back or down on those positions. They were things I had to do to get by, and some happened when I had one, two, or even three degrees. Today, I have a six figure salary; tomorrow, I may be working minimum wage.
NICHD Fellows and Investigators Share Stories of Resiliency

We have been in an altered research environment for over a year, and we could all use the connection and support provided by our NICHD community. Check out several stories below from DIR investigators and trainees. You are not alone in your struggles.

“At some point in grad school, many students think they might quit and there is no possible way through. My make-or-break came at the end of my first year. My world felt like it was collapsing—mom diagnosed with cancer, older brother overdosed—oh, and somehow qualification exams were due and lab work had to be done. Many tears were shed as I leaned on my network so hard that next year. Family, friends, and co-workers were all there to help lift me up. Somehow, with lots of help, supportive mentors, and strong friends, I made it through. Going through hardships is part of life, but that does not mean it is easy. However, with a strong network and support system, we can overcome even the most challenging of times.” — NICHD TRAINEE

“During a weekly meeting, I felt so frustrated with myself that I burst into tears. My mentors were very understanding, but they didn't stop there. They made sure I didn't feel alone and recommended the Resilient Scientist series. Through journaling techniques that were introduced, I realized that I've been anxious because I wanted to grow personally and professionally at an unrealistic speed (so I can be there for my aging parents who are oceans away). Having this awareness really helped me to be patient with and compassionate towards my inner self.” — KATHY

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“Early 2020, I was feeling hopeless as I watched the problems in our society, followed by the pandemic. *The Book of Joy* by Dalai Lama and Desmond Tutu helped me reset my perspective about our struggles. They share the eight pillars of joy: perspective, gratitude, humility, acceptance, humor, forgiveness, compassion, and generosity. Now I am grateful for what I have and am learning to accept things I cannot control as I work towards a more joyful life. I am glad that NIH is highlighting mental health issues now. Hopefully soon, seeking support for mental health will be much like seeing a doctor for physical health.” — **DR. MEGHA RAJENDRAN**

“As a newly employed postdoc who just pulled up stakes from Berkeley, CA, and moved to edgy downtown Baltimore, I felt lost without my trusted sources of beans, refried and coffee. My new surroundings at the Johns Hopkins University School of Medicine were definitely not as cheery as Berkeley. Not a single Italian cafe next to campus. My first project was to examine the genome of fission yeast to uncover transposable elements. Given this was before genomes could be sequenced, I was left pursuing a number of risky strategies to trap insertions. At the lowest point of this search, I ultimately found success literally in the mail. Fresh roasted coffee beans shipped in from Peet’s greatly boosted my morale, and in a letter from a leading geneticist studying fission yeast I found a 1 kb fragment of DNA that hybridized to 50 bands on a Southern of fission yeast DNA. The colleague suggested it might be interesting. It was! It turned out to be a bit of a retrotransposon I ultimately used to clone and study several fully mobile elements. My lesson from this is you have to take care of yourself when times are tough, and there are great benefits to being connected with colleagues.” — **DR. HENRY LEVIN, NICHD SENIOR INVESTIGATOR**
Stress in the Professional Realm: Management and Alleviation

By Esther Kwarteng

Stress can generally be defined as a change or shift that causes physical, emotional, or psychological tension.\(^1\) Although positive or negative, stress can ultimately result in physiological changes detrimental to one’s thoughts, feelings, and behavior. The effects of stress are further exacerbated in medical providers. Stress in the medical field has been a distressing theme, particularly since the emergence of the infamous phenomenon, “burnout.” Incorporated into the mental health lexicon in the 1970s by American psychologist Herbert Freudenberger, burnout is used to describe severe stress levels conceptualized in working professionals.\(^2\) Physicians and professionals alike commonly experience this exhaustive emotional state due to several factors, including the demanding nature of work and social expectations. Despite the positive impact clinicians have on society, the altruistic tradition of medicine, which places the welfare of society above self-interest, can oftentimes result in the decline of the provider, compromising the overall quality of care.

To address this obstacle, there are several distinct resources available to NIH clinicians, including but not limited to the NIH’s Employee Assistance Program (EAP). This confidential resource provides NIH employees with access to professional counseling services, such as crisis intervention and support for personal growth and development. The EAP also teaches skills for managing stress, including stress assessment and awareness, time management, and relaxation exercises.\(^3\) Endorsed by the American Psychological Association, other evidence-based methods of alleviating stress include progressive muscle relaxation, meditation, sleep, and social support.\(^4\) Through these practices, one can reduce stress levels and develop resiliency.

According to Dr. Sharon Milgram, Director of the Office of Intramural Training & Education at NIH, those who are resilient prepare to be resilient, as it requires self-reflection, learned experiences, and practice. Through the development and utilization of individualized stress management skills, clinicians and other professionals can learn to “bounce back” from difficult situations and ultimately achieve profound personal growth—positively transforming the quality of care to a more proficient medical practice.

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To Support the Supervisor and the Distressed Trainee

**OITE**

301-496-2427  training.nih.gov

- Career Services
- Educational Counseling & Advising

**SUPERVISOR SUPPORT**
Consultation and training to support quality mentorship and resolve workplace issues

**TRAINEE SUPPORT**
Graduate/professional school advising, career exploration, wellness programs, interpersonal skills development, cultural adaptation, mentor/mentee relationships

**EAP**

301-496-3164* ors.od.nih.gov/sr/dohs/EAP

- Mental Health Professionals
- Confidential
- Voluntary

**SUPERVISOR SUPPORT**
Supervisory consultation, crisis intervention, assistance referring trainees to EAP

**TRAINEE SUPPORT**
Short-term counseling, crisis intervention, community resources & referral

*Phone and face-to-face consultations

**Civil**


- NIH Human Resources
- Anonymous Reports

**SUPERVISOR SUPPORT**
Consultation to mitigate workplace difficulties, including harassment (sexual/non-sexual), inappropriate, uncivil, and other disruptive behavior

**TRAINEE SUPPORT**
Resource for harassment (sexual/non-sexual), inappropriate, uncivil, and other disruptive behavior impacting the workplace

**Ombudsman**

301-594-7231 ombudsman.nih.gov

- Consultation
- Coaching
- Facilitation

**SUPERVISOR SUPPORT**
Coaching and conflict resolution design, implementation and training, confidential discussion of personal and interpersonal issues, identify work-related problems, policy and procedures concerns

**TRAINEE SUPPORT**
Neutral, confidential, independent resource, coaching, problem-solving, resources and strategies

**OMS**

301-496-4411

**Occupational Medical Service**
[https://go.usa.gov/xnhG3](https://go.usa.gov/xnhG3), 301-496-1211 (after hours)

- **24/7, Medical Emergencies, CCBldg 10, OP6**
  - Evaluations for abrupt behavior change, substance abuse, injury, illness

**Police**

**24/7, Emergency Law Enforcement**

- **NIH Police**
  - Main Bethesda Campus
  - 911 landline, 301-496-9911 mobile
  - Non-emergency, 301-496-5685

- **Local Police**
  - All other NIH facilities
  - 9-911 landline, 911 mobile

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Flyer for Trainees & Supervisors, March 13, 2020
As the current NICHD Basic Sciences Institutes and Centers (IC) Representative, I represent NICHD postdoctoral fellows at the Fellows Committee (FelCom) meeting every month and share the latest news with you here. Do you have a concern or question that you want brought up at the next meeting? Contact me at lauren.walling@nih.gov!

The March FelCom meeting had lots of good news for fellows! Firstly, the Office of Intramural Research has approved a 4% stipend increase for all fellows starting on May 1, 2021.

The new IRTA Chapter in the NIH Policy Manual has been published and includes updated information on termination and leave policies. The new policy now includes 20 days per year of excused absence with stipend for illness, personal emergencies, or vacation, which is increased from the 15 days previously included.

The NIH Office of Intramural Training and Education (OITE) is currently preparing for their Annual Career Symposium, which will be held virtually this year on May 3–7. They are planning to bring in more than 200 speakers, including many opportunities for breakout rooms to engage with panelists. Save the date!

The new Health & Recreation Subcommittee wants to hear from you about what types of events you would be interested in. Please complete their Google form here: https://forms.gle/DshJDZSmii1okLrx7 to let them know! This subcommittee is also looking for new members. If you are interested in joining, fill out the Google form above and include your contact information.

The Training Directors Committee liaisons are organizing a Fellows Financial Wellness Seminar with Hope Madsen from the NIH Federal Credit Union. The tentative date for this seminar is April 29, but keep an eye out for more details to come!
April Announcements

SAVE THE DATE! FROM POSTDOC TO FACULTY: SUCCESSFUL TRANSITIONS TO ACADEMIA
Thursday, May 13, 1–2 p.m.

Are you thinking about a career in academia? Often postdocs spend time crafting their future research program, but are not introduced to important steps necessary for the successful transition to academia. Come learn these basics about navigating the academic job search process and important academic interviewing skills. Discover ways to prepare for success in academia once there (grants, mentoring & collaborations) and tips to avoid burnout.

This virtual seminar will be given by Dr. Paula Gregory, Associate Dean for Faculty & Educational Development in the Graduate School of Biomedical Sciences at the University of North Texas.

Please email Ms. Brittney Corum (brittney.corum@nih.gov) if you are planning to join.

SAVE THE DATE! K99 AWARDS FOR CLINICAL FELLOWS (FOR CLINICAL FELLOWS ONLY)
Friday, May 14, 9–11 a.m.

Are you a clinical fellow interested in writing and applying for a K99? This workshop will cover critical aspects of writing NIH Career Development (K) grants, including writing clear and concise Specific Aims, writing the Career Development and Training sections, and an introduction to the NIH review process and how grants are scored. Importantly, this workshop emphasizes the necessary partnership between the candidate, the mentors and the institution and its vital role in successful career development award proposals.

This virtual seminar will be given by Dr. Paula Gregory, Associate Dean for Faculty & Educational Development in the Graduate School of Biomedical Sciences at the University of North Texas.

Please email Ms. Brittney Corum (brittney.corum@nih.gov) if you are planning to join.

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SAVE THE DATE! MAY 25, 16TH ANNUAL MEETING FOR FELLOWS
The 16th Annual Meeting for Postdoctoral, Clinical, and Visiting Fellows and Graduate Students will take place on Tuesday, May 25, 2021. This year’s retreat will be held virtually.

This meeting will allow you to step away from the lab for a day to network with your NICHD colleagues, participate in a career exploration session, and learn more about the recent developments in our intramural research programs.

This year’s retreat will include:
» Keynote presentation by Dr. John F. Tisdale, Senior Investigator at the National Heart, Lung and Blood Institute, Cellular and Molecular Therapeutics Branch.
» Afternoon keynote presentation on mentoring by Dr. Gisela Storz, NICHD-NIH Distinguished Investigator, Section on Environmental Gene Regulation.
» Career breakout sessions with professionals from academe, industry, teaching, government administration, science communications, science policy, and grants management.
» You can be a highlight at the retreat too! You can present your work during the virtual poster sessions, and six fellows will be selected to give a talk from their submitted abstracts.

To be considered for one of the six fellows’ oral presentation slots, please submit your presentation title and an abstract, no later than Monday, May 3rd, to Ms. Brittney Corbin (brittney.corbin@nih.gov). The abstract should summarize your research project(s), including: an introduction with its relevance to improving human health, a description of the experimental techniques, key results, conclusion statements, and future directions. The body of your abstract should not exceed 300 words.

Registration information to follow soon!

NIH IPPCR COURSE ONLINE: REGISTRATION STILL OPEN
Interested in expanding your clinical research knowledge base in 2021? Registration for the 2020–2021 NIH Introduction to the Principles and Practice of Clinical Research (IPPCR) course is still open!

This free, self-paced, online course is open for registration until July 1, 2021. Graduate students, clinical fellows and post-doctoral fellows are encouraged to enroll now.

The IPPCR course is a lecture series from thought-leaders around the world covering:
» Study designs, measurement, and statistics
» Ethical, legal, monitoring, and regulatory considerations
» Preparation and implementation of clinical studies
» Communication of research findings and other topics

To register, please visit the IPPCR website at https://ocr.od.nih.gov/courses/ippcr.html. If you have any questions, please contact Rebecca Hwang at ippcr2@mail.nih.gov.

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NIH PCP COURSE ONLINE: REGISTRATION STILL OPEN
Registration is still open for the **2020–2021 NIH Principles of Clinical Pharmacology (PCP) Course!**

The PCP course is a free online lecture series covering the fundamentals of clinical pharmacology as a translational scientific discipline focused on rational drug development and utilization in therapeutics. Topics covered in the course include pharmacokinetics, drug therapy in special populations, drug discovery and development, and pharmacogenomics.

The course is free, self-paced, and entirely online through the [PCP website](#).

A certificate of completion is awarded to participants who achieve a passing score on the final exam.

The course will be of interest to graduate students, postdoctoral fellows, and clinical fellows interested in expanding their pharmacology knowledge base.

For additional information on the course, please visit the website above or contact Rebecca Hwang at [odpcp@mail.nih.gov](mailto:odpcp@mail.nih.gov).
April Events

WEDNESDAY, APRIL 14, 1–2 PM
Annual Postbac Course: “Cloning a Gene—How to, and Practical Applications”
Led by Raffaella de Pace, PhD
Postdoc, NICHD Section on Intracellular Protein Trafficking

If you are interested in joining the class, please email Ms. Brittney Corum at brittney.corum@nih.gov.

WEDNESDAY, APRIL 21, 1–2 PM
Annual Postbac Course: “The Graduate School Search and Application Process”
Led by Erin Walsh, PhD
Acting Director, NICHD Office of Education

If you are interested in joining the class, please email Ms. Brittney Corum at brittney.corum@nih.gov.

THURSDAY, APRIL 22, 9 AM–4 PM
NIH’s 27th Annual “Take Your Child to Work Day”
Virtual Only

NIH’s annual “Take Your Child to Work Day (TYCTWD)” is going VIRTUAL this year. Over the past 12 months, every day has been “take our children to work.” This event will provide children grades 1–12 an opportunity to see how your efforts contribute to the NIH, our nation’s biomedical research agency, and inspire them to explore career paths in science and public service.

The Office of Research Services, Program and Employee Services is the primary sponsor of TYCTWD 2021. More information can be found at the TYCTWD Site. Please email any questions and comments to Take-Your-Child-To-Work@nih.gov.

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TUESDAY, APRIL 27–THURSDAY, APRIL 29
NIH Postbac Poster Days (Virtual)

Postbac Poster Day is your opportunity to share the research you have been conducting at the NIH and at the same time develop your communication and networking skills. We encourage all current NIH Postbacs to present at this virtual event. The top 20% of poster authors will receive a letter to acknowledge this accomplishment.

For more information, please visit https://www.training.nih.gov/virtual_postbac_poster_day.

ONGOING EVENTS AROUND CAMPUS
NIH-Wide Office of Intramural Training and Education (OITE) Events
For more information and registration, please visit Upcoming OITE Events.

NIH Library Training and Events
For more information and registration, please visit the NIH Library Calendar.