Dear Friends,

Great design can only have an impact if it is adopted at scale. Although individual DtM products can save hundreds of lives, we see the greatest potential impact in our influence on global health standards. DtM’s vision is that each product we develop will become the standard of care in low-resource settings. This is the end game for a product like Firefly: providing an overwhelming incentive for multinational medical device manufacturers to follow our lead and imitate our products. Once DtM’s product concept becomes the standard, we’re free to focus our resources on other high-burden global health needs that are poorly served by the market.

We see growing evidence of support for DtM’s position that international medical device standards are insufficient and often inappropriate for low-resource settings, specifically in the increasing number of government tenders for double-sided phototherapy devices. DtM partner MTTS has applied the lessons we learned together in Firefly to two new CE Mark certified devices, including a novel newborn resuscitation device (the Dolphin CPAP).

We have also committed to scaling DtM’s impact by building the next generation of social impact designers. Over the last ten years, DtM has recruited more than 1,200 students and professional volunteers. The DtM project experience is, for many volunteers, their first exposure to problems faced by people in poor communities. For some high-empathy students with a sense of personal responsibility for the state of the world—students who often have trouble connecting with the university curriculum—the DtM project was the first time they got an “A.”

Many DtM alumni have realigned their life trajectories to focus on careers in the social sector. For example: DtM recruited a team of Stanford University students to work on newborn incubators in 2008, with DtM’s support the group launched Embrace Innovations. Their newborn warmer has since treated 200,000 newborns. Another incubator student volunteer, Mike Hahn from RISD, is now the co-founder of PayGo Energy, a technology for improving energy access in poor communities. Former DtM staff member and RISD graduate Sami Nerenberg went on to found Design for America.

We hope you enjoy this DtM yearbook for 2016! In addition to the usual program updates, we’ve included stories from across the DtM community. Together, we’re designing a better future for the most vulnerable.

Sincerely,
Timothy Prestero
Design that Matters, Inc.
Firefly

newborn phototherapy device designed specifically to allow rural hospitals with limited resources and inexperienced staff to successfully treat otherwise healthy newborns for jaundice

2016 Goals for Firefly: Support the ongoing international distribution and social impact monitoring and evaluation of the Firefly Phototherapy device. We expect to assist MTTS and Thrive Health in a design consulting role as they reach seven new countries in the next two years, and scale to 1,000 units implemented by end of 2017.

Firefly Update: Since last fall, DtM and partners have implemented Firefly in two new countries (Afghanistan, Zimbabwe). Firefly devices have now treated more than 60,000 newborns.

Firefly units are now in 23 developing countries, exceeding our 2016 target of 22. Our year-end total of 528 units in use around the world came just short of our revised target of 550 units. In summary, Firefly growth is steady and sustainable but we continue to explore options to increase distribution volume. In December, we hosted held a two-day workshop in Hanoi with our Firefly manufacturing and distribution partners to discuss opportunities to scale Firefly marketing and sales efforts, particularly targeting government tenders in Southeast Asia.

2016 numbers

83,000 Newborns Treated
23 Countries with Firefly
Finding Baby Khang

This most recent trip to Vietnam was an opportunity to reconnect with a family whose baby we saw treated with Firefly four years ago. We only had a few details to track the family down, and we weren’t sure what would happen if we did. Finding baby Khang was an unexpectedly moving and powerful reminder of why DtM exists.

On a research trip in 2012, we met a very sick newborn whose severe jaundice couldn’t be treated with conventional phototherapy. After two days of treatment with Firefly, Baby Khang was out of danger and on his way to perfect health. The next morning, Khang’s exhausted but relieved parents invited us to follow them home from the hospital. We got to have tea on the rug in their living room and meet the extended family. It was a wonderful scene: the two grandmothers fussing over the new baby, Khang’s mother looking happy-tired as she served tea to the crowd still wearing her hospital pajamas, grinning uncles elbowing Khang’s shy father, cousins and neighborhood kids laughing in the courtyard.

Four years later, we returned to the same village in Vietnam with only a name, a family photo and a Google Earth screenshot. We went door-to-door through the narrow alleys in the hopes of finding the family and catching up with baby Khang. Some friendly neighbors recognized Khang’s parents in the photo on my cellphone, and one of them grabbed her bicycle and offered to guide us to their house. When we arrived, I recognized Khang’s paternal grandmother from our last visit. She pointed to a dark-haired little boy in orange pajamas peeking at us from behind a pillar. “That’s Khang.”

Khang’s parents and older sister came home and they invited us to join them for lunch. Khang was, in every way, a normal four year old. He showed off how he could run and jump. He loved playing with his Mom’s cellphone. He annoyed his big sister. He climbed into his Dad’s lap while eating a chunk of sugarcane. Over lunch, we traded parenting stories and bad jokes through our translator. We took some pictures together and made plans for a return visit when we go back to Vietnam.

One of the challenges in social enterprise design is that it’s easy to labor for years without ever seeing first-hand evidence that what you’re doing is making a difference. We’ve been working on newborn health in general and Firefly phototherapy in particular since 2009. Firefly devices distributed by our partners have already treated more than 80,000 newborns in 21 countries from Afghanistan to Zimbabwe. It’s an encouraging statistic, but one that lacks a human scale.

Meeting Khang at four years old was remarkable for being so, well, unremarkable. When we first met him in 2012 as a tiny two-day-old baby with puffy eyes and a yellow tinge to his cheeks, Khang was on the precipice of lifelong disability or even an early death. Now, he’s an ordinary, healthy active kid. People like Khang’s parents ought to be able to take his robust good health for granted. In a just world, no one should see their child suffering from an easily-treatable condition like jaundice. Visiting Khang’s family in Vietnam was a powerful reminder. It is our privilege at DtM to make our small contribution to bringing a just world into reality.
父母在越南的昆南医院面临许多挑战。他们的婴儿不是会是未接受治疗的黄疸。Firefly是一个简单工具，但它对于治疗这一疾病非常有效。我的丈夫和我2013年成为Dtm捐赠者，并且我一直参与Dtm的工作。

今年夏天，我带着家人回到越南。我的家人在1975年从越南移民到美国。我回到了越南的家乡，我的父母在那里的村庄长大。我带着家人的医疗设备前往两家医院。

在昆南医院，有两三个房间专门用于治疗新生儿。医院有几百张床位，昆南医院是更大的医院，但没有设备。医院每天都会治疗许多新生儿。Firefly是一个简单的设备，但它可以帮助治疗黄疸。

图中是一个新生儿重症监护室。父母们每天都会来看孩子。我们非常感激他们提供的专业护理。在昆南医院，医院有设备和足够的医生，而在美国，新生儿需要更多的设备和医生。Firefly设备非常简单，可以帮助治疗黄疸。因为医院设备不足，需要将新生儿转移到更大的医院。
DtM also has a growing network of over 1,200 staff and volunteer alumni who have embraced the organization’s mission and extend our impact. The DtM project experience is, for many volunteers, their first exposure to problems faced by people in poor communities. Many DtM alumni have realigned their life trajectories to focus on careers in the social sector. For example: DtM recruited a team of Stanford University students to work on newborn incubators in 2008; with DtM’s support the group launched Embrace Innovations. Their newborn warming device has since treated 200,000 newborns. Another incubator student volunteer, Mike Hahn from RISD, is the cofounder of PayGo Energy in Kenya. Former DtM staff member and RISD graduate Sami Nerenberg went on to found Design for America.

Note that DtM does not distribute the products we design. Manufacture and distribution (including user training and long-term monitoring and evaluation) is managed by project partners. A commitment to long-term monitoring and evaluation is a selection requirement for DtM partners. This allows DtM to focus our resources on our core competencies of market research and product design.

With the help of our implementation partners, DtM tracks the beneficiaries of our products and of products our team has helped design and launch. This includes: the Acuset IV drip controller (a collaboration with Medicine Mondiale in New Zealand), the Kinkajou Microfilm Projector (a collaboration with World Education), the Embrace Newborn Warmer (a collaboration with students in the Stanford University course “Entrepreneurial Design for Extreme Affordability”), and the Firefly Phototherapy Device (a collaboration with MTTS and the East Meets West Foundation).
Firefly Cost Comparison

Consider a $3,500 Firefly device compared to a $2,500 single-sided LED phototherapy device. Let’s assume both devices will treat 500 newborns over five years of use. What is the total cost of the outcome of 500 babies treated? We consider three key variables: treatment time, the incidence of hospital-acquired infection and the rate of newborn exchange blood transfusions (a second-line jaundice treatment).

Reducing treatment time: A conventional overhead LED phototherapy device typically takes three or more days to treat a newborn with jaundice. Early results from a two-year clinical study showed that Firefly’s high-intensity double-sided phototherapy dramatically reduced the necessary treatment time, allowing many newborns to go home with their parents almost full day early.

Reducing hospital-acquired infection: Newborns who contract pneumonia or sepsis while in the hospital are given a course of antibiotics and are typically held in the hospital for an additional ten days of monitoring. Newborns treated with Firefly are isolated from other newborns in the ward because the bassinet doesn’t allow bed-sharing—and thus newborns treated in Firefly demonstrated lower rates of hospital-acquired infection.

Reducing exchange transfusion: Newborns with severe jaundice often cannot be treated with lower-intensity light from conventional overhead phototherapy devices, and thus require risky and expensive exchange blood transfusions (the only alternative when phototherapy fails). Firefly’s high-intensity phototherapy has proven capable of treating newborns that conventional overhead phototherapy devices could not. In one hospital, Firefly reduced the rate of exchange transfusions by 30%.

In the table below, we project the total health care system costs for treating 500 newborns with Firefly versus treating those same newborns with conventional overhead phototherapy.

<table>
<thead>
<tr>
<th>Line Item</th>
<th>Firefly</th>
<th>Overhead PT</th>
<th>Firefly Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device purchase and delivery</td>
<td>$3,500</td>
<td>$2,500</td>
<td>($1,000)</td>
</tr>
<tr>
<td>Cost of basic jaundice therapy</td>
<td>$17,550</td>
<td>$23,400</td>
<td>$5,850</td>
</tr>
<tr>
<td>Cost of hospital-acquired infection</td>
<td>$2,925</td>
<td>$5,850</td>
<td>$2,925</td>
</tr>
<tr>
<td>Cost of exchange transfusion</td>
<td>$3,000</td>
<td>$9,000</td>
<td>$6,000</td>
</tr>
<tr>
<td>TOTAL HEALTH SYSTEM COST</td>
<td>$26,000</td>
<td>$40,750</td>
<td>$13,775</td>
</tr>
</tbody>
</table>

After the treatment of 500 patients over five years, Firefly purchase price will be a fraction of the total healthcare cost.

**Firefly reduces total healthcare costs by 34%**

Dark squares indicate clinically-effective light intensity
Light squares indicate insufficient light intensity for effective treatment

Firefly: Hard to use wrong. The right way to use the device is the easiest way to use the device.
Myanmar study finds that high-intensity phototherapy can reduce exchange transfusion rates among newborns

January 20, 2016

A recently published study (Arnolda et al., BMC Pediatrics, 2015) demonstrates the impact of high-intensity phototherapy in averting the need for costly and dangerous exchange transfusions among at-risk newborn patients in low-resource settings.

Exchange transfusions are a treatment of last resort for severe jaundice. In the procedure, the newborn’s blood is slowly withdrawn via catheter and fresh, prewarmed blood or plasma is pumped into the newborn’s body. This cycle is repeated, resulting in a removal of about 90% of the original blood cells and about half of the vascular bilirubin. The procedure is particularly challenging in low resource countries, where the donor blood supply is limited and there is a higher prevalence of transfusion-transmissible infections.

Phototherapy has been proven by randomized trial to markedly reduce the need for exchange transfusion in high resource settings (Brown et al, Pediatrics, 1985), so the Arnolda study sought to quantify the reduction possible in a low resource setting. Conducted at four hospitals in Myanmar, the study confirmed that compared to conventional, low-intensity phototherapy, high-intensity LED phototherapy can result in a 33% reduction in exchange transfusions among transfer patients (neonates born outside the medical care center).

An earlier study (Arnolda et al, Maternal Health, Neonatology and Perinatology, 2015) validated DtM partner Thrive Networks’ experience with high incidence of severe newborn jaundice in Myanmar and many other countries. Another recent paper (Olusanya et al., Archives of Disease in Childhood, 2014) explains why delays in the diagnosis of jaundice and the start of treatment are common in developing countries, and how as a consequence these settings experience a much higher incidence of severe jaundice than industrialized countries.

These research findings represent an important validation of the value proposition for DtM’s Firefly Phototherapy Device. At the time of diagnosis in developing countries, jaundice presents almost as a different and more severe disease. Given the limited resources in these countries (everything from unreliable power supplies to lower staff-to-patient ratios), it’s unlikely that a phototherapy device designed for US or EU conditions will be appropriate for long-term use in low-resource settings. It’s hard to imagine how there could be a single “one size fits all” or “world class” standard for even a relatively simple medical technology like phototherapy.

Firefly provides high-intensity phototherapy from above and below the newborn, covering a significantly larger skin surface area than single-sided devices designed to the international standard. Fixing the position of the lights with respect to the bassinet also eliminates opportunity to user error that might occur in settings with limited user training and a much greater number of patients per caregiver. These features allow Firefly to treat neonates who might otherwise require an exchange blood transfusion.

Myanmar Jaundice Study Reveals Different, More Severe Disease in Developing Countries

October 28, 2015

Jaundice is the most common neonatal ailment requiring treatment. Untreated, it can lead to acute bilirubin encephalopathy (ABE), chronic bilirubin encephalopathy (CBE) or death. Long-term effects of CBE include learning and movement disorders as well as hearing loss and visual impairment. ABE and CBE have been largely eliminated in industrialised countries, but remain a problem of largely undocumented scale in low resource settings.

A recently published study (Arnolda et al., BMC Pediatrics, 2015) of patient data in Myanmar shows a higher risk of ABE at hospital admission among newborns born at home, and in neonates with G6PD deficiency. The study validates DtM partner Thrive Networks’ experience with newborn jaundice in Myanmar and many other countries. Delays in the diagnosis of jaundice and the start of treatment are common in developing countries, and as a consequence these settings experience a much higher incidence of severe jaundice than industrialised countries.

Overhead phototherapy devices designed to US or EU standards are intended primarily to treat mild to moderate jaundice, and are less successful in treating severe jaundice. Firefly’s double-sided design offers high-intensity phototherapy over twice the skin surface area of conventional overhead devices. This leads to faster treatment in general, and successful treatment of severe jaundice cases that might otherwise require an exchange blood transfusion.
Otter

newborn conductive warmer designed specifically to allow rural hospitals with limited resources and inexperienced staff to successfully treat premature newborns who are especially vulnerable to hypothermia

2016 R&D Goals for Project Otter:
Market and field research through Q2 will include interviews and observations with local domain experts and potential users among target markets. We will use this design feedback to generate detailed product requirements and specifications, and complete an alpha prototype for testing. Market research in Q2-Q4 will include a product bill of materials review and manufacturing study in Vietnam with MTTS, our preferred manufacturing partner.

Otter Update: With support from the Autodesk Foundation, we recruited a team to advance work on Project Otter this summer. The design sprint started with a couple weeks of orientation at the DtM studio in Salem. This included a review of the project context and background, the product requirements and specifications, and the existing CAD models and physical design concepts. The team then hit the road for a series of expert interviews, both at local neonatal intensive care units and with local manufacturers. The team then dove into concept brainstorming, some hand-sketching and lots of CAD modeling. In July, the team moved to the new Autodesk BUILD Space in South Boston for alpha prototype fabrication and testing. The Autodesk BUILD Space team were superlative hosts.

Challenges ahead of Otter include iterating on the user interface and temperature control system, ensuring that both are “hard to use wrong” and in compliance with international medical and regulatory standards. We will also examine the “bill of materials,” or the components that make Otter, to identify the best vendors and the most cost-effective manufacturing processes.

In September, DtM launched a one-year collaboration with the Affordable Design and Entrepreneurship (ADE) program at the Olin College of Engineering and Babson College. The Fall semester team of engineering and business students focused on pushing the Otter Warmer prototype towards volume manufacture and scale. Team results included detailed engineering development of the thermal system, a cost-review of the prototype bill of materials and research on international medical and regulatory standards.

In January 2017, this student team conducted a follow-up field study in Vietnam with MTTS and rural hospitals, lead by Olin adjunct faculty member Elizabeth Johansen. Elizabeth also served as DtM’s Director of Product Development during the development of the Firefly phototherapy device from 2010-2014. This field study proved to be unexpectedly useful and thorough, in that Elizabeth and the team worked with the MTTS manufacturing team to complete a detailed cost-analysis of the Otter bill of materials and to prepare the documentation for Otter’s CE certification.

In December, the DtM team took the new Otter prototype to hospitals in rural Vietnam and conducted interviews with doctors, nurses and hospital administrators. We also conducted a detailed design review with partner MTTS.
Pelican

**portable pulse oximeter that allows community health workers (CHWs) to quickly identify newborn pneumonia during home visits.**

**2016 Goal:** Revise Pelican point-of-view to focus on low-skilled community health workers. Iterate on form factor and complete alpha prototype of Pelican. Market research in Q2-Q4 will include a product bill of materials review and manufacturing study in Vietnam with MTTS, our preferred manufacturing partner.

**Pelican Update:** In February, DtM recruited a new Pelican design team through MIT Sloan Professor Steven Eppinger’s course “Product Design and Development” taught with MIT Mechanical Engineering Professor Maria Yang and instructor Jerome Arul from the Rhode Island School of Design (RISD). This was our lucky seventh product design collaboration with Prof. Eppinger’s course.

Design efforts before this team focused on a pulse-oximeter device specifically for newborns. Since then, our field research has identified the device expertise to make sense of all of the health statistics provided by a traditional pulse oximeter. The new design concept illustrates this change in product positioning.

**Next Steps:** The Pelican project needs new funding to support field-testing of the new design concept with CHWs overseas, and for the development of a production-ready prototype. We are discussing our options for repositioning this product with our partners the St Boniface Haiti Foundation and MTTS.

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Echo

**remote-monitoring technology that provides equipment-use data to identify when and which rural hospitals need additional medical devices, additional training or product maintenance.**

**2016 R&D Goals:** Market and field research through Q2 will include interviews and observations with local domain experts and potential users among target markets. We will use this design feedback to generate detailed product requirements and specifications. Market research in Q2-Q4 will include a product bill of materials review and manufacturing study in Vietnam with MTTS, our preferred manufacturing partner.

**Echo Update:** For the Echo project, the DtM team collaborated with Harvard computer science Professor Krzysztof Gajos’s course CS179, “Design of Useful and Usable Interactive Systems.” The students tackled the user interface for Project Echo, DtM’s tool for the remote monitoring of medical device donations. At the highest level, this year’s CS179 project was about determining which device data, and what formats of data-presentation, were the most likely to lead to our desired social impact outcomes: hospitals with high rates of device use receiving more training, and those with low use rates receiving more equipment, those with broken devices receiving service calls.

The primary goals of the project were to study prior art in remote monitoring and to interview stakeholders about system specifications. DtM team members presented the major findings at three global health conferences. The report conclusions are key design inputs for Echo.

During our Vietnam field study in December 2016, we conducted a design review of the current Echo design concepts with our partner MTTS, with the Firetree Asia Foundation (a device donor) and with clinical and administrative staff in rural Vietnamese hospitals. We reviewed MTTS’s current protocol for tracking product serial numbers and medical device distributions.

The Harvard CS179 Project Echo team of Amy Huang, Maria McLaughlin and Ariana Siegel, with a laser-cut cardboard head standing in for Wilder Wohns

**Next Steps:** We expect to continue work on the hardware data collection and transmission side of Project Echo with new student teams this Fall.
Opportunity Exploration

Exploring Opportunities to Tackle Zika

Although we have one great product in distribution and three others in development, DtM continues to invest in new opportunity research.

In April, DtM joined the Consortium for Affordable Medical Technologies (CAMTech) and Global Disaster Response at Mass General Global Health to host a Zika Innovation Hackathon at Massachusetts General Hospital. We packed our Makerbots and some hacking gear to help teams with rapid prototyping, and we mentored teams on product design and strategy. The event kickoff featured experts from USAID, the US National Security Counsel, the Panamanian CDC and a maternal hospital in Brazil.

Zika may feel like the crisis of the moment, but climate change means we will only see an increase in the incidence and spread of vector-borne illness. Any solution that addresses Zika would likely also apply to other flaviviruses, including dengue, West Nile and yellow fever and other diseases carried by the aedes aegypti mosquito, including chikungunya. Dengue cases have increased 200% in the last year, and the disease has a much more severe burden of morbidity and mortality. Meanwhile, the crashing pregnancy rates in countries like Colombia and Brazil from prospective parents anxious about birth defects means that the region will see lots of empty kindergarten classrooms in five years.

Tim Prestero, CEO at MGH with Dr. Claudia Osorio, Professor, Sergio Arouca National School of Public Health in Brazil.

NYC Field Day

DtM hosted our second annual Field Day at Chelsea Piers in New York City in June, a cultivation event for DtM donors and their networks. Forty families and 75 kids spent a sunny afternoon launching rockets, building a giant geodesic dome, and learning about Design that Matters.
AWARDS AND PRESS

Winner
DtM was one of 10 Classy Awards winners selected from among more than 1200 applications.
Video

Notable
Firefly was recognized as a Notable Design by the Core77 Design Awards 2016.
Video

Finalist
Otter was a finalist for the ASME iSHOW competition in Washington DC.

FEATURES

Micro-Documentaries
The Micro-Documentary film sponsored by the Autodesk Foundation led to new media opportunities including a piece for CNN.

Xploration Earth 2050
A segment on DtM will air on Earth 2050, an Emmy-nominated educational TV program for high school students that appears nationally on the Fox network.

Core77
Rain Noe, Senior Editor of Core77 published 3 articles about the history and process of Design that Matters.

FEATURES

Featured on CNN
CNN Airport Network’s Linda Ciampa takes a look at Firefly, a phototherapy device designed to treat jaundice in developing countries.

Design Observer Podcast
The Observatory team interviewed CEO Tim Prestero for episode 45 of the Design Observer Podcast. DtM feature starts at 16m36s.

GuideStar Gold
Design that Matters achieved a Gold level profile with GuideStar this year.

YOUTUBE CHANNEL
Design that Matters has published 3 new original videos outlining our program progress and design perspectives.

TED Talk reaches 1M Views!
Timothy Prestero thought he’d designed the perfect incubator for newborns in the developing world— but his team learned a hard lesson when it failed to go into production. In this video, hear what we learned about the difference between designing products and designing outcomes. See why this talk has attracted over 1 million views.

Summer Design Sprint: Otter Newborn Warmer

Research for Social Impact: Otter Warmer in Vietnam

Hack your Studio: How to Build a Z-rack Whiteboard
Finding Baby Khang
On a field research trip in 2012, we met a very sick newborn whose severe jaundice couldn’t be treated with conventional phototherapy. After two days of treatment with Firefly, baby Khang was out of danger and on his way to perfect health. His exhausted but happy parents invited us to follow them home from the hospital.

Firefly is Brighter!
Ever since Firefly entered production in 2012, DtM partner MTTS has continued to refine and improve upon the original design. The latest model Firefly has taken a huge leap in clinical intensity: 50% brighter intensity from above the baby, and almost double the intensity from below.

ADE Team in Vietnam
A team of students from Olin and Babson College brought the Otter Warmer prototype back to Vietnam this month for additional user-testing and a detailed manufacturing review. They returned with even more confidence about key design decisions, and ideas on how to significantly reduce the product cost.

Otter in Vietnam
We just returned from Vietnam, where we followed up on Firefly installations in and around Hanoi, and tested our Otter Newborn Warmer prototype with nurses and doctors at three hospitals, and with our partner MTTS.

Book Review: Notes on the Synthesis of Form
Profit up with the design world’s latest with aesthetics and artistry — just what Don’t be fooled by the cover—this book is radical dynamite.

DIM Interview in Core77
One of the highlights from Autodesk University was meeting the team from Core77. Designer and journalist Rain Noe captured the highlights of our hour-long discussion about everything from design and partnerships to stolen equipment and spies.

Partnership News

Autodesk, BUILD Space
This summer we had the opportunity to work as residents of the Autodesk BUILD Space, making great use of the scores of start-of-the-art prototyping equipment housed in the space. In prototyping, we spend a lot of time worrying about “nuisance distance”, how time-consuming and how expensive will it be to test this idea? Having our own laser-cutter and 3D printer has meant we could very quickly and cheaply generate dozens of prototypes for specific classes of product. Having access to the BUILD Space, particularly tools like the large-format CNC mill and the vacuum-former, mean we can suddenly make entire medical devices on our own. The secret to great product ideas is having lots of ideas, so we’re thrilled to be able to generate loads of physical Otter concepts this summer.

Dell, Lenovo
DIM’s partnership with the Autodesk Foundation led to new partnerships with Dell and Lenovo. Each has provided significant in-kind donations of computers, monitors, and additional equipment and supplies. Beyond the equipment donations, Lenovo has launched a webpage showcasing DIM’s work on the company’s ThinkRevolution platform, and they continue to promote our work through social media and other channels. By fostering partnerships like these, the Autodesk Foundation can leverage its relationships and extend the impact of its grantmaking, to the benefit of grantees like our organization.

National Endowment for the Arts
The National Endowment for the Arts has provided funding support to DIM for the development of Otter, a durable, portable, cost-effective newborn warmer. The NEA’s flagship grant category, Art Works funds projects designed to achieve one of four outcomes: creation of art, public engagement with art, lifelong learning in the arts, and the strengthening of communities through the arts.

“The arts are all around us, enhancing our lives in ways both subtle and obvious, expected and unexpected,” said NEA Chairman Jane Chu. “Supporting projects like the one from Design That Matters offers more opportunities to engage in the arts every day.”

“DIM is honored to be a grantee of the National Endowment for the Arts,” said DIM CEO Tim Prestero. “Design—the translation of user needs into context-appropriate products—is our core competency, and we are applying this expertise to create a newborn conductive warmer designed specifically to allow rural hospitals with limited resources and inexperienced staff to successfully treat premature newborns who are especially vulnerable to hypothermia. It’s fantastic to have the NEA as a partner in this project.”

See these and loads of other stories, program updates, HOWTOs and book reports on our new blog!
Most companies that develop medical equipment are settings in the developing world. The medical technology sector are so rare – particularly Design that Matters specifically because nonprofit organizations in similar deliverables. I wanted to work with Design that Matters specifically because nonprofit organizations in several university courses with a similar structure and much more familiar to me. I had been enrolled in which was focused on producing a prototype, was conducting interviews with experts and testing virtual research and product development. The aspect of This project was a rapid-fire crash course in design forwards and backwards is incredibly gratifying and magical. The act of creating almost always deepens my connection to the project in a significant way.

My favorite part of the design process is prototyping. The process of actualizing a concept that you’ve developed forwards and backwards is incredibly gratifying and magical. The act of creating almost always deepens my connection to the project in a significant way. This project was a rapid-fire crash course in design research and product development. The aspect of conducting interviews with experts and testing virtual concepts was new to me. The latter half of the project, which was focused on producing a prototype, was much more familiar to me. I had been enrolled in several university courses with a similar structure and similar deliverables. I wanted to work with Design that Matters specifically because nonprofit organizations in the medical technology sector are so rare – particularly nonprofit organizations that focus on low-resource settings in the developing world.

Most companies that develop medical equipment are either large corporations or for-profit social enterprises, so it was interesting to see what this niche business model would look like. Its non-profit status allows DtM to be intellectually open with its designs and ideas. Coming from a highly collaborative university environment, I was hoping to see the same sort of openness at play in ‘industry.’ I was able to speak to multiple medical professionals in American hospitals and gain their perspectives on neonatal care so I could and compare them with the perspectives of medical professionals who work in under-resourced areas. The project also increased my confidence in my ability to apply skills that I had learned in school to products that would make it into the hands of actual users.

Karan Mudgal, Industrial Design Fellow

From the get-go I was eager to get into fabrication. Having spent many years away from working on physical products, I was very excited by the opportunity to return to this work. This internship was a great chance to use many different prototyping methods -- from CNC mold making, to laser cutting and 3D printing custom hardware -- to develop our alpha Otter.

DtM has long been in my sights as a place I would love to work. While finishing my degree in industrial design, I felt quite anxious at the thought of working on phone cases or other plastic trinkets. DtM’s work is a solid example of what it means to truly listen to what users are asking for, and designing in such a way that anyone anywhere would be proud to own the product. I have always felt that we all deserve products that we are proud to own, no matter our socioeconomic status. We can’t simply expect the poor to be okay with a product because they can’t afford anything else. Everyone has a sense of pride about the things they wear, the objects they use, and the places they inhabit.

In 3 years’ time I hope to be working in the biomedical technology sector, preferably at a company that works with exoskeletons or active orthoses.

Kristine Chen, Mechanical Engineering Design Fellow

My favorite part of the design process is at the earliest stages, parsing an ambiguous problem into a plan of attack. While this step was already completed for Otter, and therefore not within our scope for the summer, I loved poring over the existing research documents and using what I found to establish a plan for validating or falsifying previous assumptions. The plan provides a clear and healthy view through which we can evaluate each design decision as successful, or in need of improvement.

During my last year in college, I became interested in design within the context of non-profit and social benefit organizations. I believe there is a tremendous unmet need within the social sector for context-appropriate design. I found Design that Matters and fell in love with the mission. Working here has broadened my understanding of qualitative research: Unlike many domestic design companies, DtM has a unique need to conduct interviews across linguistic and cultural barriers. Designed for low-resource, international contexts, the research methods we rely on are effective for design interviews in both international and domestic settings.

In three years, I hope to be working internationally, living and practicing human-centered design in a culture completely different from my own.

Malory Johnson, Industrial Design Fellow

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